

# Virtual exchange for (critical) digital literacy skills development

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## Abstract

This article examines the ways in which transcultural and digital literacy skills may be enhanced by telecollaboration, a model of virtual exchange (VE). After an overview of the literature on telecollaboration in language teacher education with a focus on digital literacy, it considers the potential of critical digital literacy development through VE. In particular, it argues for the relevance of critical digital literacy in relation to the characteristics of the twenty-first-century graduate, and the potential of the telecollaborative model of VE to develop skills to this effect in language teachers and subsequently their students. The EVALUATE project is presented, including its rationale and the methods used for data gathering and analysis, followed by the presentation and discussion of the main project findings in terms of the participants' digital pedagogical competence development and evidence of emerging critical digital literacy. Finally, it offers some concluding remarks and points at gaps that remain to be addressed, if we want to draw maximum benefit from VE for promoting a critical and informed approach to the use of technologies first in language teachers and teacher trainees and thereafter also in their students.

**Keywords:** telecollaboration, virtual exchange, digital literacy skills, language teachers, EVALUATE project, digital pedagogical competence

## 1. Introduction

The “transnational”, “value-added” graduate has been described as being equipped with a global mindset and the transcultural and digital literacy skills needed for cross-cultural communication (Wyburd 2017). These skills, as Wyburd reminds us, are implicitly developed in higher education languages students, or, can be explicitly enhanced by educators. Such explicit enhancement is the remit of telecollaboration, a model of virtual exchange (VE) which, in turn, is a broad term used to describe different methods of engaging students

in online intercultural collaboration projects with partner classes within their programmes of study and under the guidance of teachers or trained facilitators (O'Dowd and Lewis 2016). This approach has been employed for over 20 years in university education (Cummins and Sayers 1995; Warschauer 1996) in subject areas such as modern foreign languages, business studies, and initial teacher training (O'Dowd 2018). It offers students – including teacher trainees – the opportunity to improve not only their foreign language and intercultural communication skills, but also their e-literacy skills through the use of asynchronous and synchronous tools and applications which facilitate engagement and collaboration at a distance (O'Dowd and Lewis 2016).

However, most VE-related research consists of small-scale, qualitative investigations into the interactions and experiences from one bespoke exchange. The Evaluating and Upscaling Telecollaborative Teacher Education (EVALUATE) project, a European Policy Experimentation (EPE) carried out in 2017–2018, was a first attempt at providing large-scale empirical evidence of the effectiveness of VE in terms of fostering digital pedagogical, intercultural and linguistic competences in participants. A mix of quantitative and qualitative data were collected from language teacher trainees and language teacher educators engaged in the encounters. The data was analysed to establish learning gains over time in the aforementioned skills sets. This paper focuses on digital skills development through VE.

After an overview of the literature on telecollaboration in language teacher education with a focus on digital literacy (section 2), we will consider the potential of *critical* digital literacy skills development through VE (section 3). In particular, we will argue for the relevance of *critical* digital literacy in relation to the aforementioned characteristics of the twenty-first-century graduate (Wyburd 2017), and the potential of the telecollaborative model of VE to develop skills to this effect in language teachers and subsequently their students. Next, the EVALUATE project will be presented including its rationale and the methods used for data gathering and analysis (section 4). This is followed by the presentation and discussion of the main project findings in terms of the participants' digital pedagogical competence development (section 5) and evidence of emerging *critical* digital literacy. The latter is defined as the critical and practical understanding of digital technologies in different socio-cultural settings (Alexander et al. 2016).

Finally, we will offer some concluding remarks and point at gaps that remain to be addressed, if we want to draw maximum benefit from VE for promoting a critical and informed approach to the use of technologies first in language teachers and teacher trainees and thereafter also in their students (section 6).

## 2. VE, language teacher education and digital skills development

Informed predominantly by qualitative research paradigms, the reported learning benefits of telecollaboration cover a wide range of areas: learner autonomy (e.g. O'Rourke 2005; Fuchs et al. 2012), linguistic accuracy and fluency (e.g. Ware and O'Dowd 2008), intercultural awareness (e.g. Müller-Hartmann 2006; O'Dowd 2006; Ware and Kramersch 2005), online intercultural communication skills (Belz and Müller-Hartmann 2003; O'Dowd and Ritter 2006), and electronic literacy (Hauck 2007).

Unsurprisingly telecollaboration has also been enjoying increasing popularity in language teacher education programmes (e.g. Arnold and Ducate 2006; Müller-Hartmann, 2006). Collaborating online with colleagues and subsequently students from different cultural backgrounds and educational systems, has allowed teacher trainees – among other things – to first discover, then experience, and finally reflect on the multi-layered aspects of their own techno-pedagogy (Desjardins and Peters 2007) and semio-pedagogical competence (Guichon 2009) in authentic linguistic and intercultural contexts (Hauck and Kurek 2017).

Thus, it has been shown, for example, that telecollaborative exchanges provide teachers with the opportunity to use technological tools themselves before teaching with them and that it can increase their confidence to integrate technology into their classrooms (Arnold and Ducate 2006).

In Hauck (2010a; 2010b), Fuchs et al. (2012), Kurek and Hauck (2014), Hauck and Kurek (2017) and Hauck and Satar (2018) we have shown that multimodal literacy and digital literacies development through telecollaboration are interconnected and have argued for task design and teacher preparation that draws attention to this interrelationship. Earlier, in Hauck (2007) we had already established the interdependence between intercultural communicative competence development in telecollaboration and multimodal communicative competence framed as multimodal literacy and the latter – in turn – as a defining element of multiliteracies (New London Group 1996).

Helm (2014) also mentions the different modes of Web 2.0 tools and the ensuing complexity when they are used for learning and teaching purposes. “These are complex contexts in which students have to learn to operate”, she observes and which “require the development of digital literacies both on the part of learners and educators” (46).

In Fuchs et al. (2012) we explored multiliteracies training, including digital literacies, as one of its component literacies in a VE context. We hypothesised that such training contributes to what Fuchs (2006) calls the tutors’

professional literacy which Kurek and Turula (2014) have conceptualised as a core dimension of “digital teacher autonomy”. In Fuchs et al. (2012) the data came from a four-way telecollaborative exchange between teacher trainees and language learners and allowed us to illustrate that telecollaboration provides the ideal set-up for fostering multiliteracies and thus digital literacies skills development as it is, by definition, based on the use of networked technologies, and therefore facilitates “on-the-job” training in digital literacy skills (Helm 2014).

In Kurek and Hauck (2014) we propose a task framework for training in digital literacies conceptualised as “multimodal communicative competence”, reflecting the approach put forward in Fuchs et al. (2012). It allows students – thus also teacher trainees – to move along a continuum from informed reception of multimodal input through thoughtful participation in opinion-generating activities and on to creative contribution of multimodal output. Together with the approach suggested by O’Dowd and Ware (2009) for sequencing activities in telecollaboration, this framework guided the task progression developed for the EVALUATE study (see section 4).

In Hauck and Kurek (2017) we advocate that digital literacies development should be an integral part of pre- and in-service training programmes for language teachers and reiterate that telecollaborative exchanges provide an optimal setting for such training. However, a systematic, large-scale study informed by qualitative and quantitative data and providing evidence for the added value of VE in (language) teacher education in terms of digital skills development has – until recently – been missing in the literature. Similarly the relevance of “critical” digital literacy and its potential development through VE remains under-acknowledged and consequently also under-explored in published research.

### **3. The relevance of *critical* digital literacy skills and their development through VE**

Before focusing on *critical* digital literacy, we need to define digital literacy. Despite its widespread use, digital literacy is a broad and elusive construct and is not only challenging to grasp but also to teach. Apart from our own attempt at framing digital literacy by drawing on multimodality (Kress and van Leeuwen 2001), i.e. the many modes available online for meaning making, communication and interaction (see section 2), there exists a plethora of definitions. For the purpose of this contribution, we have opted for the one proposed by

Alexander et al. (2016: 1) in their work for the New Media Consortium, as it highlights the critical dimension of digital literacy:

The critical and practical understanding of digital technologies in socio-cultural settings, where people are creators as well as observers.

The common feature of most definitions is that digital skills have both functional and critical dimensions. Putting the critical dimensions into practice presupposes – as we hold – the ability to exercise agency as understood by scholars both inside and outside the field of second language acquisition (SLA). Inside SLA, agency has been defined as the individual’s “socioculturally mediated capacity to act” (Ahearn 2001: 112), and is seen as dynamic, emerging and shaped in and by interaction with others (e.g. van Lier 2008) and mediated by a range of contextual factors (Ahearn 2001; Lantolf and Thorne 2006; van Lier 2008; Wertsch et al. 1993). In VE these contextual factors include the sites, tools and applications used by participants to collaborate across time zones and geographical distance. Outside SLA, agency, critical agency in particular, has been defined in line with Freire’s (1970) understanding of critical consciousness as the ability to read the world critically and to act in the world to change it (Giroux 1983; McLaren, 1995). Both understandings are – in our view – relevant to critical digital literacy.

Alongside the plethora of digital literacy definitions, there are numerous digital literacy frameworks. However, Brown (2017) points to a general lack of consideration of how these definitions and frameworks are being taken up in practice. “Properly contextualised digital literacy provision”, Brown asserts, “needs to be anchored in real life contexts” (Crump 2018).

VEs offer such real-life contexts and are by default mediated by technology. They therefore provide – we propose – an ideal setting not only for the contextualisation Brown refers to, but also for fostering agency as outlined above, namely critical agency and thus critical digital agency which allows participants to move beyond the functional and instrumentalist dimensions of digital skills. As we have suggested elsewhere (Hauck 2018), referring to the work of Brown (2017) and Darvin (2017), VE can help learners become aware of how operating in digital spaces shapes ways of thinking and doing and how we perceive otherness. Moreover it also allows participants to examine the linguistic and non-linguistic features of digital media including their biases and assumptions (Kurek and Hauck 2014; Hauck and Kurek 2017).

For this to happen though, educators need to foreground the sociopolitical contexts within which they themselves and their learners are operating, or rather are taking part in a VE. Pegrum (2009: 53) has pointed this out already a decade ago with regard to technology and teacher education:

It is imperative that teacher training covers far more than technology and pedagogy. Educators need a clear sense of the social and socio-political embeddedness of technology.

Again, VEs seem to emerge as a very suitable set-up for training to this effect: with each exchange at least two different sociopolitical contexts are brought together. Yet, the potential of VE for fostering participant competence in critical digital literacy remains under-researched.

In the next section we will show how the EVALUATE study set out to enhance digital skills in teacher trainees and whether the approach chosen was conducive to promoting critical digital agency in the way we have framed it above.

## 4. The EVALUATE project

### *4.1 Project team and project participants*

EVALUATE was an European Policy Experimentation (EPE) gathering a consortium of researchers, a university network (Compostela Group) and public authorities. Drawing on qualitative and quantitative research methodologies, the project collected and analysed data from 25 VEs across the curriculum involving over 1,000 student teachers at initial teacher training institutions in Europe and beyond. The average exchange period was 65 days. Figure 1 gives a project overview:

Apart from the sample size, the collaboration with an entire university network as well as education ministries to promote and upscale the use of VE in teacher education in Europe, was another novelty of this project.

### *4.2 Rationale and research focus*

The project was motivated by the fact that only 20–25% of students in Europe are taught by teachers who are confident using technology in the classroom (European Commission 2015a). At the same time, teachers need to be prepared for the classrooms of tomorrow and equipped with the skills and competences to teach in culturally diverse contexts, to collaborate across disciplines and to use technologies in innovative ways. This is in stark contrast to reports that online technologies are predominantly used as a remedial tool and that innovative approaches to technology use are often limited to the pedagogical activities of a small minority of practitioners (European Commission 2015b).

Although today's student teachers may belong to a generation perceived as digitally versed (Kurek and Hauck 2014), research justifiably has questioned the belief that they are intuitively capable of using digital technologies in



**Figure 1.** EVALUATE project overview

Source: EVALUATE Group (2019)

### Stages of Virtual Exchange in Initial Teacher Education



collaborative ways in their learning and teaching practices (e.g. Hauck and Kurek 2017; Kirschner and De Bruyckere 2017; Selwyn 2009). Thus, those responsible for initial teacher education (ITE) in Europe have to find ways to better prepare their students.

The European Council and Commission on the implementation of the Education and Training 2020 urges teacher training programmes to “reap the benefits of new [Information and Communication Technology (ICT)] developments and adopt innovative and active pedagogies, based on participatory and project based methods” (ET2020 2015: 5), an approach which sits at the heart of VE.

In recent years the European Commission has financed several projects promoting VE as a tool in university education in Europe:

- the Integrating Telecollaborative Networks in Higher Education (INTENT) project (2011–2014) aimed at raising awareness of VE in university education;

- the Evidence-Validated Online Learning through Virtual Exchange (EVOLVE) projects (2018–2020) aims to promote virtual exchange across all subject areas in higher education; and
- the Erasmus+ Virtual Exchange flagship programme (2018–ongoing), which has set out to expand the reach and scope of the Erasmus+ programme through VE.

The target group of the EVALUATE project is future teachers. The research addresses the interrelationship between their participation in VEs and the development of competences needed to teach, collaborate and innovate effectively in an increasingly connected and digitalised world (for a detailed report see EVALUATE Group 2019). Here we report on findings in relation to one of the three sub-questions of the study:

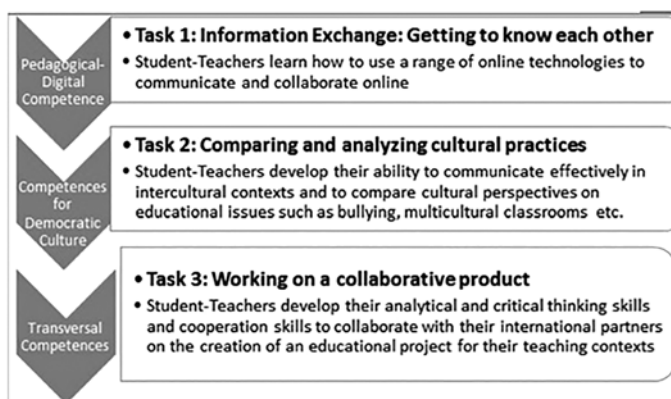
“What impact will virtual exchange have on student teachers’ digital pedagogical competence development?”

An additional focus of this article is to establish whether the approach to task design and the research methods are also suitable to first promote and then provide evidence for *critical* digital literacy skills development in VE participants.

### 4.3 Methodological approach

#### 4.3.1 Tasks design

The exchanges followed the Progressive Exchange Model which has been widely used in VE research and practice to date (Fuchs et al. 2012; Hauck 2010b; O’Dowd and Lewis 2016; O’Dowd and Ware 2009) and which engages participants in a task sequence moving from information exchange to



**Figure 2.** The progressive exchange telecollaborative model for initial teacher education

Source: Müller-Hartmann (2017: 9)



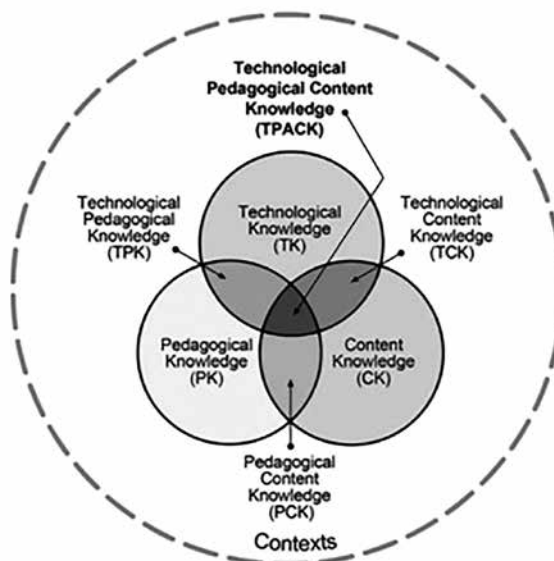
comparing and analysing cultural practices and finally to working on a collaborative product. To reduce the number of variables and ensure a degree of comparability across exchanges, the teacher trainers were provided with sets of tasks to choose from at each stage of the task sequence. All tasks were designed to foster the development of key competences. Figure 2 illustrates the approach:

The task sequences were informed by Hoven's (2006) experiential modelling approach where online tools and processes which teachers are expected to use in their future teaching practice are experienced from a learner's point of view.

#### 4.3.2 Methods

The study followed the Guidelines for Conducting a European Policy Experiment (J-Pal Europe 2016) and used a mixed methods design (Nunan and Bailey 2009) with experimental and control groups. To measure the development of digital competences we drew on the Technological Pedagogical Content Knowledge (TPACK) work by Mishra and Koehler (2006) (see Figure 3) and the quantitative survey to measure the TPACK components subsequently developed by Schmidt et al. (2009).

As digital competence development was one out of three research sub-areas, the 47 item questionnaire by Schmidt et al. (2009) was shortened to 17 items in order to keep the overall amount of survey items manageable for participants. The 17 items covered four out of the seven sub-constructs of the TPACK



**Figure 3.** The TPACK model by Koehler and Mishra (2005)

Source: <http://matt-koehler.com/tpack2/using-the-tpack-image/>

instrument: technological knowledge (seven items); technological content knowledge (one item); technological pedagogical knowledge (four items), and technological pedagogical content knowledge (five items). A Likert response scale of 1 =totally disagree to 5 =totally agree was used for each item.

The research design also included the gathering and qualitative content analysis (Zhang and Wildemuth 2009) of textual data such as reflective diary entries, transcripts of exchanges in chat fora and participant interviews.

The TPACK instrument developed by Schmidt et al. (2009) was used in a pre-post manner as a proxy for growth in digital competences. The qualitative data allowed us to gain a deeper understanding of the impact of VE in ITE and to answer those questions which cannot be addressed by a classic pre-test, post-test method.

At the pre-test stage, for example, the following open questions – among others – were asked in the learner diary:

Can you give a concrete example (a lesson, a series of lessons, or even an entire class/course) of how the use of technology has enhanced teaching or learning (a situation where you were either a learner or a teacher)? What was the topic and which tools and/or online environments were used?

The mixed method approach is supported by Anderson (2008) who points to the need for a combination of qualitative and quantitative methods in cross-national research in particular “due to the highly diverse cultural contexts to be studied” (91).<sup>1</sup>

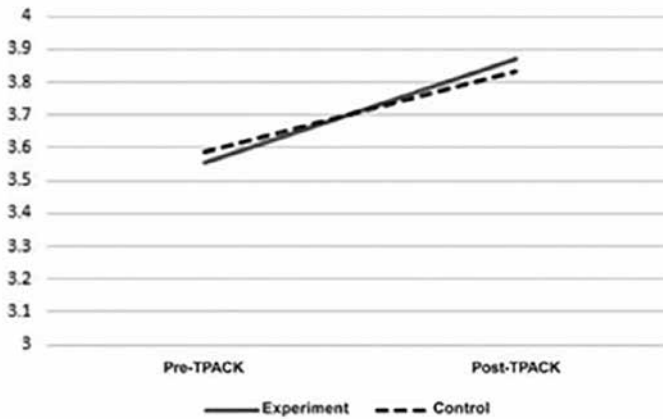
## 5. Findings and discussion

### 5.1 Quantitative results

All 579 survey participants developed stronger (self-reported) TPACK competences over time.

First, a smaller subset of the experimental and control condition in three out of the 25 VEs was compared. The control group (n=63) had a slightly higher score at the TPACK pre-test, whereas the experimental group (n=127) scored slightly higher at the post-test. The average learning gain in the experimental group was 0.30 (SD=0.50) and 0.18 (SD=0.51) in the control group. While this effect was not statistically significant, it is correct to say that the TPACK scores

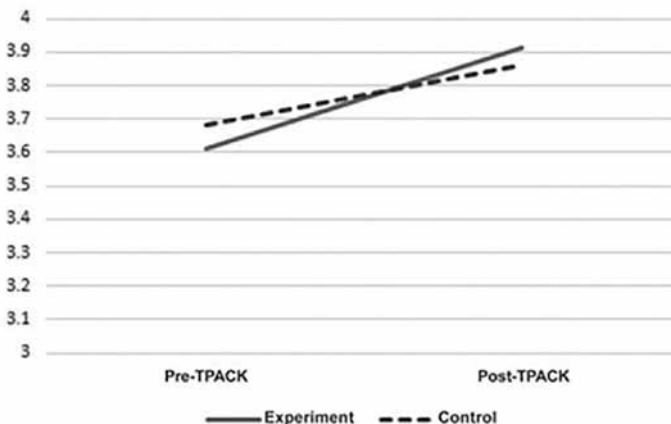
1. For a detailed outline of the research methodological approach and the underpinning rationale including a discussion of TPACK-based studies see Hauck et al. (forthcoming).



**Figure 4.** Pre- and post-TPACK scores in experimental and control groups in three EVALUATE VEs  
 Source: EVALUATE Group (2019: 43)

for students in both groups increased with a slightly higher effect in the experimental group (see Figure 4).

Subsequently the TPACK competences development was compared with all participants who had completed the pre- and the post-test (n=516; see Figure 5). 70% of students in the experimental group had positive TPACK scores at the pre-test, in comparison to 73% of control students. At the post-test, 88% of



**Figure 5.** Pre- and post-TPACK scores in experimental and control condition across EVALUATE  
 Source: EVALUATE Group (2019: 44)

experimental students in the treatment group had positive scores compared to 80% of control students.<sup>2</sup>

Next we present the findings from our qualitative analysis.

### **5.2 Qualitative results**

Our qualitative content analysis of the learner diary entries (see section 4.3.2) led to the identification of the following themes which were used to code the data in NVivo:

- technology used;
- challenges encountered when using technology for teaching;
- most important insights gained in terms of technology used;
- experienced benefit of technology use (self);
- projected benefit of technology use (self);
- projected benefit of technology use (students);
- methodological use of tools;
- technology chosen to enhance learning;
- technology chosen to enhance teaching.

The most popular tools listed by the participants (“technology used”) were Skype, Google (docs), Facebook, Prezi and Kahoot. For the remaining items we present representative diary entries per theme.

As for challenges related to the use of technology, lack of familiarity with bespoke tools and applications and difficulties due to bandwidth and connectivity were mentioned most frequently. However, overall a solution orientated approach prevailed:

I had difficulty communicating through Uniko because of technical problems. My group members and I solved it by texting in another social network: WhatsApp.

With regard to “most important insights gained in terms of technology used”, participants repeatedly pointed to methodological opportunities through the use of tools they had thus far not been aware of:

I used to think that using a PowerPoint presentation with images and colours and a

2. For analyses per TPACK sub-construct (Technological Knowledge, Technological Content Knowledge, Technological Pedagogical Knowledge and Technological Pedagogical Content Knowledge) see The EVALUATE Group (2019: 44–45).

Kahoot activity now and then was “innovating” in the [English as a second language] classroom. Thanks to this exchange I have not only discovered new tools but reflected about them and applied them into a task that could be perfectly used in a real class. For example, I did not think that an exchange like the one we had been engaged in would be carried out this way. I thought that it would be like a Skype conversation or sending emails to a group of people. However, thanks to Task 3 [collaboration on technologically-based task design], I have seen how learners can actively use their L2 to think critically even if their English is not at its higher level by giving them materials they can understand and a challenge that engages them.

Another reference reflects the realisation that one’s teaching approach changes through technology integration, from a more teacher-centred to a more learner-centred focus:

Incorporating technological tools into our lessons changes the way we teach. As a teacher, I can choose which tools I want to use in my lessons, but apart from PowerPoint presentations, most tools would shift the focus from the teacher to the students. Using technology forces me to think more about the learning process I want my students to go through, which skills I want them to practice or acquire, what language I want them to use or learn, and so on.

Examples for the theme “experienced benefit of technology use (self)” include reflections on perceived personal advantages of a tool or application alongside pedagogical considerations and were linked to the tasks carried out during the VE (see section 4.3.1):

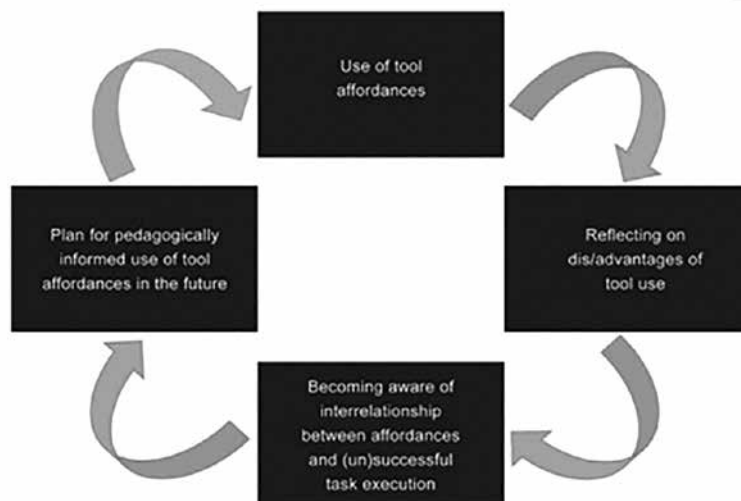
In my first task I created an “About Me” presentation from an online website that allowed me to display information about myself. I have learned that it’s important to select technologies that appropriately reflect you as a person, especially when creating a presentation about yourself. When picking which online tool to use to complete the first task I decided to use the “About Me” website because it allowed me to accurately reflect who I am as a person.

Testimonies about “methodological use of tools” were often part of “experienced benefit of technology use”, mainly as a result of making use of and thus becoming fully aware of tool affordances:

I have learned that technology can help you in your teaching approach. We used Google Docs to make a picture book.

The VE allowed the participants to go through a cycle of exploratory practice (Allwright and Hanks 2009) in relation to their digital skills development (see Figure 6). The reflection phases integrated into the task sequences the participants carried out during their VEs were particularly conducive to this effect, as was the experiential modelling approach underpinning the task design for the EVALUATE VEs (see section 4.3.1).

Thus “reflective, experiential learning” (Kolb 2015) turned out to be key for



**Figure 6.** Developmental cycle of exploratory practice in technology  
 Source: EVALUATE Group (2019: 49)

the successful completion for this developmental cycle. Furthermore “experiential modeling” (Hoven 2006) led to future oriented reflections about the potential of technology for teaching. These were captured under the theme “projected benefit of technology use (self)”:

My group created a Prezi presentation. It is a presentation program that allows you to explore and share ideas about a topic, in our case about Leon. I did not know this program before, so it was a great discovery.

A similar insight is reflected in this quote:

I didn’t use prezis before. I thought the platform is hard to work with, so I had not used it, but when we started to work on the task, I decided to make an effort and try it out. So our group figured out how to use it. I will definitely use it as a teacher because it offers variety and helps creating interesting presentations.

The participants also commented on the projected benefit of technology use for their future students. Their observations often spoke at the same time of their gain in pedagogical knowledge while working with technology:

I think that online debating tools such as Padlet can be used to start a discussion because they allow students to put their arguments/answers to words first before discussing them at plenary in class.

Still, a substantial amount of references in terms of pedagogical knowledge were captured separately under the themes “technology chosen to enhance teaching” and “technology chosen to enhance learning”. Unsurprisingly, there was a significant amount of overlap between the themes which resulted in a significant number of instances of double coding. The second theme in particular extends “projected benefit of technology use (students)” (see above), in so far as references here clearly indicate a clear link between a bespoke tool or application and a specific pedagogical intervention in the classroom. In addition, some participants testified to this competence at the outset of their VE. They had either already used technology for teaching purposes context, or had observed an in-service teacher doing so:

As a teacher, in a unit regarding Multicultural England, I used a platform such as SymbalooEdu to give information and display fun resources about the theme to the students. I also used this platform to make webquests, fun activities, which were used by the students at home, to evaluate this unit and others, beside the paper examination, requested by the school, I have also used Kahoot and the response was really positive. The results were above average in the majority of the cases.

### **5.3 Discussion**

The qualitative analysis largely corroborates the quantitative findings in terms of the participant’s digital competence development through VE. It also highlights the positive impact of VE on awareness and attitude towards technology use for formal educational purposes. Kurek and Hauck (2014) suggest the “double mediation” effect of computer-mediated communication as a possible explanation, i.e. the fact that in VE, the processes the student teachers and subsequently their learners are involved in, are at least mediated twice: by the technology used and – in the majority of cases – by the use of a second or additional language, or a lingua franca. Moreover, exploring technology use and developing digital competence while using and also depending on technology to be in touch with your learning partners, allows teacher educators to frame technology as both the means and the ends of a VE, and thus to systematically foster student teachers’ digital competence development, or – as Helm (2014) put it – to provide “on-the-job” training in digital literacy skills.

The EVALUATE findings for intercultural competence development through VE show a similarly positive outcome. The students’ diary entries reveal that the project presented them with a variety of hurdles: As a result of this “real-life” experience of online collaboration they faced communication, cultural, linguistic and/or technical challenges. However, while tackling the

challenges, the majority of participants acquired new competences in terms of behavioural flexibility, interaction management, messaging skills and language competence some of which interrelate with digital competences.<sup>3</sup>

There is also plenty of evidence in the qualitative data presented here of increasing learner agency in an SLA sense: the individual's "socioculturally mediated capacity to act" (Ahearn 2001: 112), which is dynamic, emerging and shaped in and by interaction with others (e.g. van Lier 2008) and mediated by a range of contextual factors (Ahearn 2001; Lantolf and Thorne 2006; van Lier 2008; Wertsch et al. 1993). In the EVALUATE EPE the contextual factors under consideration were the tools and applications used in the VEs.

The only other contextual factors systematically explored in the EVALUATE EPE were the experiences of teacher educators who were running VEs as part of their ITE courses within the context of teacher education in their countries. Among the learning gains reported by this group of stakeholders were digital skills and greater awareness of their partners' cultures and of differences between education systems.<sup>4</sup> The relevance of the wider sociopolitical context of the VEs and the opportunity they offer for critical reflection beyond differences in institutional settings and education systems remained unaddressed.

Coming back to the focus of this contribution then, criticality as expressed in the data is limited to critical awareness of tool affordances and potential pedagogical tool use. What is missing though, is the critical dimension of digital literacy as reflected in awareness of the socio-cultural contexts of technology use beyond education systems.

The question is: if we accept that VEs offer real-life contexts for "properly contextualised digital literacy provision" (Brown 2017) and for fostering the kind of agency that helps participants move beyond the functional and instrumentalist dimensions of digital skills, namely *critical* digital agency, why has this opportunity for skills development to this effect not been taken up yet by VE scholars and practitioners? Or rather, why have the interventions reported in published research – including the EVALUATE EPE – not helped participants become aware of *how* operating in digital spaces shapes ways of thinking and doing and *how* we perceive otherness. Similarly VE-based investigations into the biases and assumptions inherent in both linguistic and non-linguistic features of digital media remain a desideratum.

3. For a detailed report on findings in terms of intercultural competence development see EVALUATE Group (2019: 26–42).

4. For an overview of all learning gains reported by teacher educators see EVALUATE Group (2019: 63–84).



With regard to intercultural competence development, Helm (2017) observes that it is not easy to reach a level of critical engagement with the complexity of intercultural communication through VE. In EVALUATE, different degrees of task-orientation were highlighted as a barrier to deeper engagement with difference and otherness: “Some participants’ partners had an almost exclusive focus on tasks, with limited time for more social, interpersonal interactions” (EVALUATE Group 2019: 41).

While this might also apply to critical digital competence development through VE, we suggest the answer lies in the approach to task design itself and is probably compounded by varying levels of task-orientation among participants.

The EVALUATE project is a classic example in case: engagement with technology was a focal point in the initial phase of the task sequence the student teachers carried out and where they learned how to use a range of online tools and applications to communicate and collaborate, and then again later on in the exchanges, when they designed tasks for their future learners and had to make informed choices as to technology use in relation to jointly agreed upon learning goals (see Figure 2). In both cases, technology is seen as a means to an end rather than an end in itself. Engagement of the kind Morris (2017) proposes has yet to become a learning goal of VEs:

Look beyond the tool to how we use the tool. Look beyond how we use the tool to how the tool uses us. Look beyond how the tool uses us to how we can resist, hack, change, or simply “prefer not to”.

Unsurprisingly, enhanced critical consciousness and agency as propounded by Giroux (1983: see section 3) in relation to technology use in particular, has yet to become an acknowledged benefit of VE – despite the fact that it offers an ideal setting to foster the critical dimension of digital literacy in twenty-first-century transnational graduates. As we have seen, the practice of VE can enhance digital skills through its experiential approach. Yet, to instil and nurture criticality in relation to technology use in participants, task design that triggers guided reflection on tools and interactions and on the wider sociopolitical context of an exchange is needed.

The majority of tasks popular in VE (see [uni-collaboration.eu](http://uni-collaboration.eu)), especially task design for VE-based teacher education, lack this critical dimension and thus an approach that “covers far more than technology and pedagogy”, and that gives educators “a clear sense of the social and sociopolitical embeddedness of technology” (Pegrum 2009: 53). Similarly, in the epilogue of her PhD thesis, Helm (2016) reminds us of the political and humanitarian challenges we are currently facing and the need to develop critical thinking as much as media literacy to support especially young (language) learners in engaging with difference.

The recent EVOLVE project does recognise this need as well as the potential of VE to encourage and support participants in developing criticality in the aforementioned sense.

EVOLVE is funded as a Forward-Looking Cooperation Project under Erasmus+ Key Action 3: Support for policy reform, Priority 5 – Achieving the aims of the renewed EU strategy for higher education (EACEA 41/2016). Forward-Looking Cooperation Projects (FLCPs) are described by the EU as: “transnational co-operation projects aiming to identify, test, develop or assess innovative policy approaches that have the potential of becoming mainstreamed and giving input for improving education and training systems” (EACEA KA3 FLCP homepage).

The project offers dedicated training for educators in critical digital literacy skills development and uses an e-Portfolio to capture their experiences during the process. The training draws on the following input:

- an extract from a keynote by Maren Deepwell, the CEO of the UK’s Association for Learning Technology (ALT): Beyond Advocacy – Who Shapes the Future of Learning Technology?
- a collection of blog posts on critical pedagogy by Sean Michael Morris, the Director of the Digital Pedagogy Lab at the University of Marr Washington, US
- the work of Brown (2017) and Darvin (2017).

The first round of educator training took place in October/November 2018 with subsequent VEs running in Spring 2019. The e-Portfolios completed by the learners have recently been submitted to the research team and are in the process of being analysed.

## **6. Concluding remarks**

Undoubtedly survey studies – such as the EVALUATE EPE – exploring perceptions and experiences of learning with technology and including student teachers, provide important information to help ministries and schools in planning education programmes.

Yet, most virtual exchanges – including those that took place in the context of EVALUATE – don’t expose participants to “a broader scope of symbolic enquiry” (Kern 2014) which fosters “a critical perspective that will prepare them to understand and shape future language and literacy practices” (341).

Engaging in such enquiry means talking about and describing how linguistic and non-linguistic features are co-deployed in online texts and interactions, and to relate their insights to contexts of situation, culture and sociopolitical factors. As outlined above, VE offers an ideal backdrop for implementing this approach.

It is also in line with the approach to digital literacy skills development advocated by scholars outside of VE. Dudeney, Hockly and Pegrum, for example, in the forthcoming second edition of their volume entitled *Digital Literacies* (first edition 2013), have been revising their digital literacies framework in the light of both technological and sociopolitical developments of the last half-decade. They use Brexit and Trump's America as an example to attract our attention to the sociopolitical aspects of digital literacies. In an era of clashes between trends towards superdiversity on the one hand and counter-vailing political attempts to stem the free flow of people and communications on the other, they argue, the sociopolitical aspects of digital literacies need to be considered. In addition to the existing elements of their framework such as intercultural literacy and participatory literacy, they are putting more emphasis on ethical literacy – how we interact with and treat others – and critical literacy which – according to Pegrum – “is about thinking all this through” (pers. corr.). Like Kern (2014), Pegrum sees these as lenses for approaching difference and for thinking about ourselves in relation to difference. Therefore, the question that researchers and practitioners in technology-mediated learning of language and cultures should be asking, is how we can support our learners – including teachers as learners – more than just linguistically in the contemporary sociopolitical climate, or indeed, in any sociopolitical climate.

## Acknowledgement

I would like to thank my colleague, Prof. Andreas Müller-Hartmann (Pädagogische Hochschule, Heidelberg), with whom I evaluated the data on digital literacy skills development in the EVALUATE EPE.

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## Résumé

Cet article examine comment la télécollaboration, un modèle d'échange virtuel (EV), peut améliorer les compétences en littératie transculturelle et numérique. Après un survol de la littérature sur la télécollaboration dans la formation des enseignants de langues en mettant l'accent sur l'alphabétisation numérique, il examine le potentiel de développement des compétences essentielles en alphabétisation numérique par le biais de l'EV. En particulier, il plaide en faveur de la pertinence des connaissances numériques critiques par rapport aux caractéristiques des diplômés du XXI<sup>e</sup> siècle et du potentiel du modèle télécollaboratif de l'enseignement supérieur à développer des compétences à cet effet chez les enseignants de langues, puis chez leurs étudiants. Le projet EVALUATE est présenté, y compris sa

raison d'être et les méthodes utilisées pour la collecte et l'analyse de données, suivi de la présentation et de la discussion des principales conclusions du projet en termes de développement des compétences pédagogiques numériques des participants et de preuves de la culture numérique critique émergente. Enfin, il propose quelques conclusions et met en exergue les lacunes qui restent à combler si nous voulons tirer le meilleur parti possible de l'EV pour promouvoir une approche critique et éclairée de l'utilisation des technologies d'abord par les enseignants de langues et les enseignants en formation, puis à l'avenir, par leurs étudiants.

**Mots clés:** telecollaboration, échange virtuel, compétences en littératie numérique, professeurs de langues, Projet EVALUER, compétence pédagogique numérique



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