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Articles

A telecollaborative approach to foster students' critical thinking skills

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Abstract: This study reports on a telecollaborative approach to foster students' critical thinking skills, more specifically to help them gain knowledge about a different educational culture and develop a critical perspective upon their own educational culture at the university. The study specifically examines the extent to which participation in telecollaboration enabled students to complete a critical thinking task and how students perceived their telecollaborative learning experiences. Undergraduate students taking a Critical Thinking course at a university in Turkey telecollaborated with undergraduate students at a university in the USA for three weeks. They were given a critical thinking task in which they exchanged information with their US partners, compared their education with the US education and analyzed their education from a critical thinking perspective, developed three written arguments based on the telecollaboratively-exchanged information as their final product, and reflected upon their telecollaborative learning experiences. According to the analysis of their written arguments and survey responses, telecollaboration provided students with an effective medium to complete the critical thinking task, although some students reported experiencing some problems. Suggestions are offered for better learning experiences in future telecollaborative implementations.

Keywords: telecollaboration, critical thinking skills, developing arguments, student perceptions.

Introduction

In training students as responsible global citizens, it is important to help them see their world with a critical eye so that they can consider problems from a range of perspectives (Leask, 2015). One way to achieve this at the higher education level is through intercultural exchange and communication. In contexts where students do not have an opportunity for physical mobility, technological advances create new learning spaces that allow them to engage in virtual exchange or telecollaboration.. With teacher guidance, learners from geographically distant cultural contexts can come together to interact and collaborate in pairs or groups using synchronous and/or asynchronous online communication tools (Chun, 2015; O'Dowd & O'Rourke, 2019). These exchanges have become so widespread among language classrooms as to have grown into a subfield of foreign language learning (Dooly & O'Dowd, 2012).

Telecollaborative efforts of teachers and researchers are often directed towards linguistic and intercultural abilities of learners (Belz, 2005; Chun, 2011; Hauck, 2007; Schenker, 2012). The most commonly promoted language-related aspect is grammar (Akiyama, 2017; Lee,

2011; Vinagre, & Muñoz, 2011; Wach et al., 2021; Ware, & O'Dowd, 2008). Evidence from such studies has affirmed positive outcomes connected to linguistic and intercultural development of students as a result of engagement in telecollaborative learning. Following the recent calls for engaging students in more critically-oriented exchanges (Helm, 2013; O'Dowd, 2016), the developmental focus of telecollaboration has expanded beyond language learning and intercultural development to teacher training (Bilki et al., 2019; Dooly & Sadler, 2013; Üzüm et al., 2020), content knowledge development (Cunningham, 2019; Saricaoglu, & Geluso, 2020) or development of digital literacies or global perspectives (Duffy et al., 2020; González, 2020; Helm, 2013; Lenkaitis & Loranc-Paszylk, 2021; Oskoz & Gimeno-Sanz, 2019; Priego & Liaw, 2017). While there has been scant research on the latter, telecollaboration has the potential to contribute to the development of students' critical perspectives, which is the concern of this study.

The present study reports on a telecollaboration project, in which Turkish undergraduate students taking a Critical Thinking class telecollaborated with undergraduate students in the USA for three weeks. The Critical Thinking course provides a potentially fertile ground for telecollaborative learning, in which learners can gain an understanding of other cultural perspectives and become more self-reflective about their own culture (i.e., educational culture in this study). Although telecollaboration has been practiced for many years, Turkey has only recently responded to the upsurge of interest in telecollaboration. With an aim of enhancing students' critical thinking skills, this study contributes to documenting such an effort. It specifically examines the extent to which participation in telecollaboration enabled students to complete the critical thinking task and explores students' perceptions regarding their telecollaborative learning experiences.

Effectiveness of telecollaborative learning

Effectiveness of telecollaborative learning is often assessed through gathering evidence about student perceptions regarding specific aspects of the implementation such as affordances, topics, challenges, learning outcomes or overall experiences. Some researchers also gather information about students' selfor peer-assessment of preparation for the exchanges or participation in the exchanges (e.g., Saricaoglu & Geluso, 2020; Vahed & Rodriguez, 2020). Most studies make use of both qualitative and quantitative data (e.g., Akiyama, 2017; Basharina, 2007; Fuchs, 2019; Ryshina-Pankova, 2018). In collecting quantitative data, researchers frequently use preand post-survey design and Likert-scale items. Common qualitative data sources are open-ended survey items, asynchronous written interaction, online social media or blog posts, synchronous interaction transcripts, interviews, and written reflections or journal entries.

Despite some reported challenges and frustration (see the following section), several studies suggest positive outcomes associated with student

engagement in telecollaboration, including improved grammatical competence (Akiyama, 2017; Wach et al., 2021; Ware, & O'Dowd, 2008), intercultural competence (Chun, 2011; Hauck, 2007; Schenker, 2012), or pragmatic competence (Belz & Kinginger, 2003; Belz & Vyatkina, 2005; Cunningham, 2016).

Belz and Kinginger (2003) found out that participating in telecollaboration with expert speakers increased learners' appropriate pronoun use in German over time. Chun (2011) found that synchronous text chats engaged learners more in dialogues and demonstrated more evidence of developing learners' intercultural competence than the asynchronous forum postings. Akiyama (2017) documented successful uptake of corrective feedback by learners when there was a match between the corrective feedback and their feedback preferences.

Positive outcomes of telecollaborative learning have also been reported for developing students' global competencies. Duffy et al. (2020) qualitatively explored whether a nine-month virtual exchange between the USA and Thailand led to an increase in global competencies (cross-cultural communication and global awareness and mindfulness), critical thinking, and transformative learning of undergraduate students from the USA. Working telecollaboratively, students completed two assignments: getting to know each other using a series of questions and discussing critical questions about the topics of disability, inclusion, and adaptive sport and writing a joint paper on their collective thoughts. The qualitative analysis of data from students' written reflections and focus groups revealed an increase in all areas. Using a preand postsurvey design, Lenkaitis and Loranc-Paszylk (2021) examined the effect of a six-week synchronous virtual exchange on the development of university students' global citizenship competences. Students met weekly and had discussions on the topics of sports, patriotism, advertising, crime, and natural disasters. The survey included both Likert-scale items asking students to rate their self-identification as global citizens and the changes in their global citizenship identities as a result of the virtual exchange and an open-ended item asking what global citizenship is. Results demonstrated a significant increase in the participants' selfreported identification of global citizenship, which was also supported by the qualitative results indicating that their understanding of global citizenship developed as well.

Similar to the studies by Duffy et al. (2020) and Lenkaitis and Loranc-Paszylk (2021), this study also benefits from telecollaboration in enhancing students' critical thinking skills. It assesses the effectiveness of telecollaboration based on two data sources: students' written arguments and responses to the survey items. Building an effective argument that is wellsupported with sound reasons is one of the primary components of critical thinking skills (Allen, 2004; Bassham et al., 2011; Mayfield, 2014). Thus, in line with the objectives of the Critical Thinking course (i.e., understanding, recognizing, evaluating, and developing arguments), the product creation component of the telecollaboration in this study was designed around arguments, asking students to develop three

written arguments on three education-related topics based on the telecollaboratively-exchanged information.

Factors influencing the effectiveness of telecollaborative learning

Because telecollaborative exchanges frequently ended in failures in the past (O'Dowd & Ritter, 2006), many practitioners and researchers turned their attention to identifying the factors that hinder the success of telecollaborative learning experiences, especially by examining students' perceptions. Ware and Kramsch (2005) determined that cultural stereotypes were a prominent source of misunderstandings between U.S. and German peers who discussed historical, cultural, and political issues involving the USA and Germany. In a 12-week telecollaborative project among learners from Japan, Mexico and Russia, Basharina (2007) identified three types of contradictions: intra-cultural contradictions (i.e., to post or not to post, and to sound formal or informal; inter-cultural contradictions (i.e., unequal contribution, genre clash/plagiarism, and clash of topic choice); and technology-related contradictions (i.e., overload, speed, and confusion).

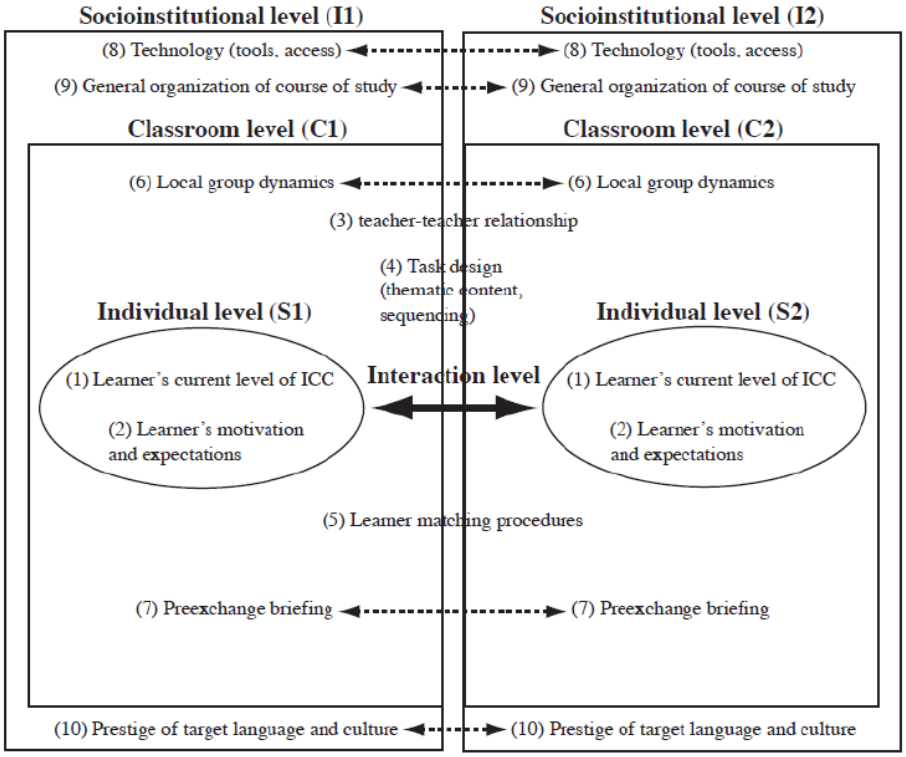

Figure 1
Areas of dysfunction in telecollaborative exchanges as identified by O'Dowd and Ritter (2006)

With an aim of offering educators a comprehensive overview of areas of dysfunction in telecollaborative exchanges, O'Dowd and Ritter (2006) produced a structured inventory consisting of 10 different factors at four different levels: two factors at the individual level (Learners' current level of ICC & Learners' motivation and expectations), five factors at the classroom/methodological level (Local group dynamics,

Teacher-teacher relationship, Task design, Learner matching procedures & Preexchange briefing), three factors at the socioinstitutional level (Technology tools and access, General organization of course of study, & Prestige of target language and culture), and the interaction level at which factors from other levels interact and influence each other. Some of the factors in the inventory of O'Dowd and Ritter (2006) are less relevant today as a result of the developmental changes throughout the years, such as institutions and individuals having more technological resources, practitioners getting more experienced in pre-exchange briefing or matching learners, and individuals having increased intercultural competence levels and more respect towards other languages and cultures. However, some factors continue to be sources of failure in telecollaborative exchanges, as demonstrated in some recent studies. In a large-scale survey study involving language teachers and students from 23 different European countries encountered in telecollaboration, Helm (2015) reported seven barriers: differences in institutional calendars, differences in language proficiency levels of student groups, differences in the aims and approaches of teachers, lack of time for the project, lack of student motivation, cultural clashes and misunderstandings, and lack of institutional support (from the most commonly reported to the least). In Wach et al.'s (2021) study, students' negative perceptions were associated with the asynchronous communication through emails and unequal and irregular participation. Because students can provide the most valuable feedback on the quality of telecollaboration, understanding their perceptions is important to make better instructional decisions in future implementations. Thus, this study also gives voice to student perspectives concerning their telecollaborative learning experiences in the Critical Thinking class.

The reviewed literature shows the strong potential of telecollaboration for pedagogical use. The findings of this study are expected to increase our understanding of this potential for enhancing students' critical thinking skills in higher education. Given that successful implementation of telecollaboration is still a challenge, the affordable and challenging aspects are also of primary interest in this study. Particularly, answers to the following research questions are sought:

1. To what extent does participation in telecollaboration enable students to complete a critical thinking task?
2. How do students perceive their telecollaborative learning experiences?

Methodology

Context and participants

The telecollaboration took place at a public Turkish university. Participants were 53 2nd-year undergraduate students (34 females & 19 males) who were enrolled in two sections of a Critical Thinking course.

They were all non-native speakers of English majoring in the English Language and Literature program. The aim of the Critical Thinking course was to help students gain the knowledge and skills required for critical thinking. The telecollaborative exchange project was designed as a required assignment in the course, and students' final products (written arguments) constituted 30% of their final course grade. The researcher was the instructor of the course. Based on her previous telecollaborative experiences, she believed that this course provided a unique context in which students could exchange ideas with students from a different culture on some educational issues.

The instructor found her counterpart, who was working in a large public university in the Midwest USA, through a virtual exchange fair that was organized by UNICollaboration, an inter-disciplinary organization for telecollaboration and virtual exchange in Higher Education (https://www.unicollaboration.org/). The counterpart students (n=36) were undergraduate secondary education students enrolled in three sections of the Digital Learning in the Secondary Classroom class. The tasks for the U.S. students was to communicate with Turkish students and gather information about the self-selected topics related to Turkish school systems and the educational technologies used in Turkey, to record their VE progress in journal entries, and to submit individual reports and reflections. Because no data were collected from the counterpart students, no other details are available.

Due to the difference in the number of students from partnering classes, some students worked in pairs (TR-USA) and some students worked in groups (TR-TR-USA or TR-TR-TRUSA). In total, there were 24 pairs, seven groups including three students, and five groups

including four students. All TR students, whether they telecollaborated with their USA partners in pairs or groups, completed the production task of developing written arguments individually.

Tasks

The telecollaboration was implemented over three weeks (see Table 1 for the structure of the telecollaborative critical thinking task). The tasks were designed following the three task categories identified by O'Dowd (2017): information exchange, comparison and analysis, and product creation. In the first week, students' task was to get to know each other by posting selfintroductory videos on Flipgrid (http://www.flipgrid.com/) and watching their partners' videos, and to contact their partners asynchronously to schedule meetings and determine the communication tools. In Week 1, students were also given the topics for the written arguments and were asked to generate a set of questions that would help them garner the information from their partners to develop their arguments. Paying attention to the curricular requirements of the teaching context, as O'Dowd and Ritter (2006) suggest, the topics were pre-determined by the instructor in line with the focus of the

Critical Thinking course as the following: (1) the role of higher education in fostering students' critical thinking skills, (2) the role of learning technologies in fostering students' critical thinking skills, and (3) the role of cultural diversity in learning environments in fostering students' critical thinking skills. Generating their information exchange questions provided students with freedom to decide on what aspects to base their arguments on. In order to complete the telecollaborative critical thinking task, students needed to learn about U.S. students' educational culture and landscape and to make comparisons between the TR and USA so as to take a critical perspective on their own university education.

Table 1

Structure of the telecollaborative critical thinking task

Step	Week	Sub-Task	Mode
1	Week 1	Get to know each other Schedule meetings Determine communication tools	Telecollaborative & Asynchronous
2	Week 1	Generate information exchange questions	Individual
3	Week 2	Exchange information	Telecollaborative & Synchronous or Asynchronous
4	Week 2	Compare and analyze	Telecollaborative Synchronous or Asynchronous
5	Week 3	Develop written arguments	Individual
6	Week 3	Reflect upon the experience	Individual

In the second week, the task for the students was to telecollaborate with their partners either synchronously or asynchronously to exchange information as well as to make comparisons between each other's educational cultures and critically analyze their own education in terms of its potential for developing their critical thinking skills. Because students had to collaborate under the constraint of the 8-hour time difference between the two countries, they were provided flexibility in how to communicate (synchronously or asynchronously). In the last week, students individually worked on their final products, in which they developed three written arguments using the exchanged information. They also reflected upon the telecollaboration by completing the post-telecollaboration survey.

Data collection and analysis

Data were collected through students' written argument grades, and a post-telecollaboration survey. As a part of the classroom procedures, each argument was graded out of 10 using a rubric developed by the instructor based on the features of good arguments (Bassham et al., 2011) and the assignment requirements: whether the argument was in the given topics, whether it met the word limit requirement (around 100-150 words), whether the premises were clear, whether the conclusion was clear, and whether all the premises were true for the conclusion, and they provided

good reasons to accept the conclusion. For the purposes of this study, grades were transferred to 100.

The survey was administered online outside class using a Google form. It consisted of 10 items, including six close-ended items and four open-ended items. The items were adopted from Saricaoglu and Geluso (2020). The close-ended items asked students about their telecollaboration experiences: whether this was their first telecollaboration, whether they communicated asynchronously or synchronously, how many questions they asked to their partners, whether their communication with the partners was effective or not, and whether they would want to have more telecollaborative experiences in their future courses. There was also a multiple-choice question asking if the telecollaboration contributed to any of their skills (Language, Learning technologies, Critical thinking, Intercultural, Communication, or None). The open-ended questions asked students to express their overall impressions of the telecollaboration, to explain any difficulties they had, to comment on equal participation, and to share their suggestions for more effective telecollaborative learning experiences. Forty-eight out of 53 students completed the survey.

Students' written argument grades and responses to close-ended survey items were quantitatively analyzed using descriptive statistics. Students' grades across the three arguments were compared conducting a one-way analysis of variance (ANOVA). Their responses to openended survey items were qualitatively analyzed through content analysis. Students' overall impressions were coded as Positive and Negative. Responses to the question regarding the difficulties encountered were coded in three categories as No problems, Problems with poor communication, and Problems with the technology. Responses to the question about students' suggestions for more effective telecollaborative learning experiences were coded in four categories as More telecollaborative opportunities, Longer telecollaborative experiences, Better communication, and Common tasks.

To establish the reliability of the coding process, an additional researcher, an English language instructor who is doing her PhD in English Language Teaching, rated 10% of the data independently. Inter-coder reliability was calculated using percentage agreement and was found to be 92%. All discrepancies were resolved through discussion until agreement was reached.

Results

Completion of the telecollaborative critical thinking task

This telecollaboration was the first telecollaboration for almost all students (n=45, 94%). A slightly higher number of students (n=26, 54%) preferred asynchronous communication (i.e., through texting or emailing) with their partners than those who communicated synchronously (i.e., phone or video calls) (n=22, 46%). We do not know

how five students communicated with their partners because they did not respond to this item.

Prior to the information exchange task, students were asked to develop a minimum of five questions to ask their partners. However, after the telecollaboration, they reported that they asked 12 questions on average, with 12 (25%) students asking fewer than 10 questions and 36 (75%) students asking more than 10 questions. Most students (n=37, 77%) responded positively to the question regarding whether they communicated with their partner effectively while responses from 11 (21%) students were negative.

Table 2

Descriptive Statistics across Arguments

Argument	N	*M*	*SD*	CI 95%	
Argument 1	50	82.80	15.12	78.50	87.10
Argument 2	50	74.40	13.43	70.59	78.22
Argument 3	50	75.60	18.20	70.43	80.77

Out of 53 students, only three (6%) did not submit written arguments. Fifty students were able to complete the critical thinking task through participating in this telecollaboration. Table 2 displays the descriptive findings regarding students' grades for each argument. Students received higher grades for Argument 1 (M=82.80, SD=15.12) than Argument 2 (M=74.40, SD=13.43) and Argument 3(M=75.60, SD=18.20). The analysis of variance showed a significant difference in grades between arguments, F(2, 147)=4.18, p=.017. Post-hoc comparisons using the Tukey HSD test showed that the mean score for Argument 1 was significantly different from Argument 2.

Table 3

Posthoc comparison results

Argument	Argument	Mean Difference	Std. Error	Sig.	CI 95%	
1	2	8.400	3.142	.023	.96	15.84
	3	7.200	3.142	.060	-.24	14.64
2	1	-8.400	3.142	.023	-15.84	-.96
	3	-1.200	3.142	.923	-8.64	6.24
3	1	-7.200	3.142	.060	-14.64	.24
	2	1.200	3.142	.923	-6.24	8.64

Students' perceptions of their telecollaborative learning experience

Overall, most students (n=39, 81%) had positive impressions of their telecollaborative learning experiences. In their responses, some students briefly referred to the learning experience in general as "It was a great experience," or "It was informative." Some other students focused on the fact that they communicated with a native speaker ("We had the chance to communicate with a native student"). They also stated that they learned

about a different culture ("I learnt so many things about their culture and their education system as well"). Responses from some students focused on the fact that the learning experience was fun. There were also a few students who mentioned about their partners: "She was nice to us and answered all of our questions."

Regarding the contributions of the telecollaboration to developing students' skills, only a few students (n=6, 13%) thought that the telecollaboration did not contribute to developing any of the language skills, learning technologies skills, critical thinking skills, and communication skills. Less than half of the students (n=17, 31%) believed that it contributed to their critical thinking skills. Only four students (8%) reported contribution to learning technologies skills. The rest of the students reported positive perceptions regarding contributions to their language skills, intercultural skills, or communication skills.

Regarding equal participation, most students (n=38, 79%) thought that they and their partners participated equally. The following comments exemplify students' positive perceptions regarding equal participation: "Yes, everyone contributed equally. I believe we all tried our best." or "I think everybody participated equally." Those students who believed that their partners did not contribute equally commented on the late or simple responses they received or no questions asked by the partners, as demonstrated by the following student remarks: "I answered my partner's questions much faster; besides, I generally explained many details about my answers. Most of my partner's answers were short." "My questions were much more informative then his. He asked simple questions." "He did not ask any question." Despite a few students, probably those who felt some frustration, the majority of students (n=39, 81%) expressed interest in participating in telecollaboration in their future courses.

Out of 48 students, 37 responded to the open-ended question regarding the difficulties encountered in their telecollaborative experiences. Three distinct themes emerged from the analysis: (1) no problems (reported by 13 students, 35%), (2) problems associated with poor communication between the partners (n=16, 43%), mainly due to the time zone difference or late (i.e., days later) response from the U.S. partners, and (3) problems with the technology (n=8, 22%), most of the time an issue of losing connection. Below are some student comments reflecting such difficulties:

> "I had to wait my partner's answer for a very long time. Therefore, I worried about my project." "We couldn't communicate. She gave late responses."
>
> "There was one technical problem where we our messages weren't forwarded in WhatsApp." "There was a[n] internet problem for a while, except that it was really well."

Students' responses to the question about more effective telecollaborative learning experiences centered around four main suggestions: (1) more telecollaborative opportunities for students (" It might be more common in the universities because it is nice to learn about other universities and other countries"), (2) longer telecollaborative

experiences ("Having a longer time for the projects like this might be better. Because it takes a lot of time to organize things and complete everything"), (3) better communication between the partners in terms of more timely responses ("Students must do their works on time"), better attitudes ("In my opinion, our partners' should take the project more serious"), and synchronous communication rather than asynchronous communication ("Video call or audio call should be a must"), and (4) common tasks for both groups of students ("Participants could argue a certain subject. Our partner did not ask us anything related to critical thinking. We asked our questions but she said they do not have to hand in our answers about critical thinking. So, she just asked random questions. It was kind of confusing").

Discussion

This study explored the use of telecollaboration to enhance students' critical thinking skills, in particular, the extent to which students were able to complete the critical thinking task through participating in telecollaboration, and students' perceptions of their telecollaborative learning experiences. Findings showed that the majority of students completed the critical thinking task through telecollaboration, developing the questions that would elicit the information they needed for their arguments, exchanging information with their partners, comparing their educational culture with the USA education and analyzing their own education with a critical perspective, and developing their education-related arguments as a result. Students would not have been able to develop a critical perspective of their own educational culture without awareness and knowledge of a different educational culture. Thus, telecollaboration offered the means to exercise critical thinking skills within the context of this study.

Students developed three education-related arguments based on the telecollaborativelyexchanged information: the first one on the role of higher education in fostering students' critical thinking skills, the second one on the role of learning technologies in fostering students' critical thinking skills, and the third one on the role of cultural diversity in learning environments in fostering students' critical thinking skills. Students developed better arguments for the first topic than the other topics, with the first arguments receiving significantly higher scores than the second arguments. The lack of qualitative data from the students' telecollaboration process unfortunately limits our understanding of the underlying reason behind why they developed better arguments for the first topic. For example, did students ask more questions about the first topic than the others? Yet, a manual qualitative examination of students' second and third arguments provided some insights. A major problem in the second and third arguments of some students was the lack of a specific connection to the critical thinking skills. In the example argument below (university names have been anonymized), the student wrote about the advantage of being a student at a small new university, with students

having easier access to the technological resources, and the advantage of a non-technological classroom environment. However, there is no explicit discussion of how these features of the Turkish high educational culture contribute to developing students' critical thinking skills. The argument demonstrates that through telecollaboration, the student was able to gather the information needed and to compare and analyze their high education in terms of the potential for developing students' critical thinking skills. However, it appears that within the process of individual argument development, the student was not able to connect all ideas specifically to the theme of the critical thinking skills.

In a school environment where students can easily access the technology opportunities, searching, creating and analysing are easier and more advantageous. As a newly established university, [our university] has less students than [the American university]. That's why students [at our university] have higher chance to use computers and they do not have to wait for queue in order to benefit from library environment and other technological devices. Moreover, having less classmates in classroom creates an environment which is more suitable to think critical because everyone has enough time to point out and argue his\her ideas. These chances are lower in [the American university] than [our university]. I believe that writing, highlighting and pointing out the specific points of the topic that arguing on paper is effective while thinking. In this context, using hardcopy books is beneficial like students do [in our university].

The findings showed that most students had positive impressions of the telecollaboration. Positive impressions of some students were associated with the opportunity to communicate with a native speaker and learn about a different culture. The chance to have access to and communicate with native speakers of English appears to have become the main motivation for students and to have gotten ahead of the main pedagogical goal in this telecollaboration. This was also obvious in the survey responses to the question on the contribution of this learning experience to students' different skills. Only less than half of the students recognized contributions to their critical thinking skills. Most students believed that this telecollaboration contributed to their language skills, intercultural skills, or communication skills. Even though they were able to complete their critical thinking task through participation in telecollaboration, they were not aware of the main goal of this collaboration: to give them an understanding of a different educational culture and to help them gain a critical perspective of their own educational culture.

One of the biggest problems some students encountered in this telecollaboration was the delay in communication with their partners, which was partly due to the asynchronous mode with some students waiting responses to their emails or messages for days. While asynchronous communication "has the advantage of being space and time independent" (Helm, 2013, p. 30) and may work well for some specific telecollaborative tasks, the lack of instant interaction caused some frustration for the students in this study. For asynchronous communication, Chun (2011, p. 415) comments

that it "often lack[s] true interaction" and that students will need constant and repeated reminders unless they are trained for asynchronous communication. Verifying that, upon the students' request in this study, we needed to ask the U.S. instructor for a few reminders. The lack of the feeling of interacting with real people and the feeling of depersonalized collaboration was reported by students in previous text-based telecollaborations (The EVALUATE Group, 2019). To avoid such feelings of students, The EVALUATE Group (2019) recommends balancing synchronous interaction (through videoconferencing) with asynchronous interaction so that videoconferencing can help build the relationship between student exchangers.

In this study, except for the problems arising from the time zone difference or technological issues, a particularly challenging aspect of the telecollaboration was for the students to effectively communicate with their partners. Because of receiving late or simple responses as well as simpler questions or no questions from the partners, some students negatively perceived their telecollaborative learning experiences. The differences in the timing or depth of responses or questions might be due to the fact that the counterpart groups had different tasks to complete within this telecollaboration. Engagement in different types of activities as a source of contradiction was observed in earlier studies (e.g., Basharina, 2007). To develop strong arguments in the production task, the Turkish students needed to gather detailed information, which might explain why simple responses from the partners caused frustration among them.

In perspective-based studies, students often talk about the effort and time they devote to the telecollaborative tasks (Helm, 2015; Lee, 2009; Saricaoglu & Geluso, 2020). In this study, a few students also commented on the time-consuming aspect of the telecollaboration and suggested that future telecollaborative experiences be designed for a longer time span. With regard to the time commitment involved in telecollaboration, giving some space and time to the telecollaboration within the course syllabus and attaching some academic weighting to it are among the factors that O'Dowd (2013) suggests teachers should consider. Telecollaborative projects are time consuming for instructors to design (Guth et al., 2012) as well as for students to complete, but are essential for several reasons from internationalization to learning gains and professional development.

Limitations

Although this study contributes to the telecollaboration literature with a focus on critical thinking skills, it has limitations that future studies should build upon. First, the telecollaboration in this study lasted for only three weeks. Although short implementations are common in telecollaborative practices, such exchanges should provide learners with prolonged opportunities and engagement. Second, this study is one-sided reporting on the Turkish class. Studies analyzing data only from one of the classes are not rare in the virtual exchange literature (Chen & Yang,

2016; Dooly, 2011; Ware & Kessler, 2016). In fact, O'Dowd (2021b) acknowledges this as the hard reality for most researchers and advises that this type of studies should not be undervalued. Yet, two-sided studies can certainly provide a bigger picture, thus a better understanding of students' engagement in telecollaborative learning behaviour and outcomes. In order to find out students' impressions of the telecollaborative learning experience, this study administered only a post-telecollaboration survey. Tracking change in students' perspectives through a pre-telecollaboration and post-telecollaboration survey design would have yielded deeper insights into the effectiveness of the telecollaborative learning experience. While this study relied upon students' final product data (written arguments) and their perspectives (survey data), collecting data from the telecollaboration process would have better informed our understanding of their task completion. For example, analyzing the recordings of the synchronous meetings or asynchronous communication posts would have shed light on the differences between the qualities of their written arguments. Finally, because the telecollaboration in this study included a short time span and both synchronous and asynchronous communication, the researcher's primary intention as the instructor was to provide students with a safe environment and safe critical-discussion topics. However, for a more meaningful critical thinking-oriented telecollaboration, a dialogic model, as Helm (2013) calls it, including divisive topics (e.g., religion, media, stereotypes) can be pedagogically more consistent with the objectives of a Critical Thinking course.

Conclusions

Although the wide adoption of telecollaboration by educational institutions has led to changes in educational policies, especially in the European context, telecollaboration still has not been integrated into regular curricula at most higher education institutions, including those in Turkey. It is practiced mainly at the individual level where teachers find partners to facilitate collaboration between their students, this study being an example. When used effectively though, telecollaboration can function as a very useful pedagogical tool in higher education courses. Especially in an era in which physical mobility of students is restricted by global challenges such as Covid-19, virtual exchange deserves to be integral to curricular models. This study is one small attempt at demonstrating that telecollaborative spaces can help to overcome the inadequacy of traditional classroom-based instruction in developing students' critical thinking skills through an understanding of other cultures.

The findings of this study offer some implications for telecollaborative practices. Most researchers tend to focus on critical success factors that operate during the telecollaboration process, but I believe that those factors actually stem from the pre-implementation or design phase of the telecollaboration, which requires a very effective collaboration between the two instructors and a common understanding of successful

telecollaboration by both. As O'Dowd and Ritter (2006) put stress on, a good teacher-teacher relationship is significant for the outcome of telecollaboration. The fact that partner teachers do not know each other prior to the telecollaboration has an undeniably adverse impact on building that good relationship. Thus, one of the instructors' primary objectives should be to build a common understanding of effective telecollaborative practices, which is only possible with a close communication sharing established beliefs, plans, and expectations. "Virtual exchange may be mediated by digital technologies but its success depends on person-to-person [teachers and students] engagement" (The EVALUATE Group, 2019, p. 109). Rather than focusing on "the logistics of the exchanges and the pedagogical tasks which students will work on", telecollaborative practitioners should "establish good working relationships together, to get to know their partners as real people, and not merely as anonymous names and avatars on a computer screen" (p. 110). A second key objective should involve a joint or common task for all participating students, rather than bringing them together for different tasks. This will give students a shared responsibility for adhering to the task and process, engaging actively, making equal contributions to the task completion, and respecting each other. Third, the time-independent asynchronous communication mode allows students to spend more time on the input they receive and the output they send (Heift & Vyatkina, 2017); however, students who are accustomed to a faceto-face class's typical synchronous atmosphere may seek more social interaction, thus may benefit more from a synchronous learning environment in telecollaboration. In asynchronous implementations, either decided by the instructors or preferred by the students, following Chun's (2011) advice, students should be well trained for communicating with their partners in a timely manner or be provided with constant reminders for that.

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Notes

1 In this study, the terms "virtual exchange" and "telecollaboration" are used interchangeably. For a discussion of how the terms relate to or depart from each other, see Colpaert (2020) and O'Dowd (2021a).

Declaración de intereses

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