Building Bridges Across Borders and Digital Divides?
Possibilities and Limits of Digital Formats in the Context of University Cooperation

Daniel H. Rellstab(✉)

University of Education, Schwäbisch Gmünd, Germany
daniel.rellstab@ph-gmuend.de

Abstract. Digital technologies have been integrated into foreign language learning classrooms for a long time [1]. Yet during the global pandemic, when borders were closed and traveling had become all but impossible, international exchange formats experienced an "unprecedented phase of digitalization" [2, p. 21]. Today, we can safely assume that digital technologies will play a key role in international exchange in the future (cf., e.g., [3]). Digital exchange such as virtual tandems can simplify access to international and intercultural experiences and thus increase students' motivation to learn a foreign language. However, using digital technologies to unite students from different parts of the world also poses challenges as "digital divides" [4] pervade the globe and its societies. Analyzing and interpreting diary entries and interactional data from a virtual tandem project between students from the École Normale Supérieure, Porto-Novo, Benin, and the University of Education Schwäbisch Gmünd, Germany by adopting nexus analysis [5], I will demonstrate how digital capital, "'a set of internalized ability and aptitude' (digital competencies) as well as 'externalized resources' (digital technology)" [6, p. 2367], and its use in combination with other forms of capital mediate success and failure of digital exchange projects on an individual level. I argue that international virtual exchange can only succeed if we carefully consider all the facets of digital capital in its planning and implementation.

Keywords: virtual tandems · digital divide · international cooperation · German as a foreign language

1 Introduction

Internet-based communication technologies such as Skype or Zoom have been increasingly used during the pandemic to establish virtual classroom arrangements, as student mobility was and, in some cases, still is drastically restricted. Such arrangements will certainly gain post-pandemic importance as well. If we follow the discourse in Germany and in German institutions that organize and fund international exchange, it seems that the pandemic has finally catapulted us into the digital age, and that digitization can, at least partially, solve two problems that arise in the context of international exchange. Erasmus+, for example, the European program to support education, training, youth, and

M. Hidayati et al. (Eds.): ISoLEC 2022, ASSEHR 742, pp. 46–55, 2023.
https://doi.org/10.2991/978-2-38476-038-1_6

sport in Europe, aims to make international exchanges more accessible through blended mobility. They write:

"While long term physical mobility is strongly encouraged, this action recognises the need to offer more flexible physical mobility duration to ensure the programme is accessible to students from all backgrounds, circumstances and study fields" [7].

Digital technologies should make international exchange programs more sustainable, too. In a position paper published one year ago, the German Academic Exchange Service, the DAAD, writes that in 2020 people were not only challenged by the pandemic but that in the same year awareness of the consequences of climate change had finally reached policymakers and the public:

"2020 also saw the dramatic effects of climate change, long predicted by members of the scientific and civil sector, suddenly capture public attention with unprecedented clarity. Against this backdrop, we must rethink how we operate and take action with greater urgency than ever" [3, p. 2].

For the DAAD and for Erasmus+, it is clear that physical mobility cannot simply be replaced by digital exchange formats. It is difficult to build trust, cultivate relationships, or experience cultural or political differences only in an online environment. However, digital formats can be used to organize meetings and gatherings that are accessible to many; thanks to digital media, it has become possible to expand knowledge, digital competence, and language skills without traveling [3, p. 8]. Yet the DAAD also points out that digital formats presuppose the existence of digital infrastructure; moreover, many digital teaching-learning settings are still in their infancy and have by no means been conclusively evaluated in terms of learning outcomes [3, p. 11].

These are correct and important observations, but they still fall short. After all, digital divides cannot simply be bridged by providing technical infrastructures, since they are constructed by a complex interplay of different factors. These include economic, social, but also personal factors, such as educational background, motivation, and knowledge [6, p. 2368]. And whether digital divides can be overcome also depends on the digital literacy of users, that is their skills in, their knowledge of, and their attitudes towards the use of the Internet [8, p. 346].

I cannot answer all the questions that arise in the context of the use of digital formats in international exchange. In the following, however, I will provide some insight into a project that we, German Studies at the University of Education Schwäbisch Gmünd, and the German Department at the School of Education of the Université d'Abomey-Calavi, the Ecole Normale Supérieure Porto-Novo, realized during the summer semester 2021. I will demonstrate how digital divides manifest themselves in the project, how students can disappear in the divides, and how other students benefit from the exchange. Before I discuss the project, I will briefly explain my understanding of digital divides. I will then present, analyze and interpret diary entries related to the project from a German student, and will relate these statements to a short interaction sequence stemming from a classroom setting where the classes from Benin and Germany interacted via Zoom, thereby demonstrating that and how "bridging" digital divides can succeed even under suboptimal conditions.

2 Digital Divide

The term "digital divide" has been used since the 1990s and has often been attributed, rightly or not, to Manuel Castells, who wrote in 2003: "The usual meaning of 'the digital divide' refers to inequality of access to the Internet. […] [A]ccess alone does not solve the problem, but it is a prerequisite for overcoming inequality in a society whose dominant functions and social groups are increasingly organized around the Internet" [4, p. 248].

It has been clear early on that digital divides are constructed by differences in economic capital, but also by social factors such as age, gender, education, place of residence, marital status, and origin or migration background [9, p. 111]. Current social science research examining the diffusion and use of digital technologies has systematized these observations. One approach to theorizing the digital divide draws on Pierre Bourdieu, echoing his idea that the availability of different resources, or varieties of capital, is crucial to social positioning. Bourdieu has distinguished, among other things, between economic capital; incorporated cultural capital, meaning education; objectified cultural capital, such as books; institutionalized cultural capital, such as titles; and social capital, by which he has meant the social network and membership in a social group [10]. Ragnedda has adopted a Bourdieusian framework to define digital capital:

"In Bourdieusian terms, we may define digital capital as 'a set of internalized ability and aptitude' (digital competencies) as well as 'externalized resources' (digital technology) that can be historically accumulated and transferred from one arena to another" [6, p. 2367].

According to Ragnadda [6], digital capital is based on other types of capital: social capital; political capital, i.e. the possibility of political influence; economic capital; personal capital, i.e. all the experiences that someone has had and that influence their actions; and cultural capital. These five different sorts of capital and their interrelations with digital capital are responsible for digital divides globally and locally. Ragnadda [6, p. 2367–2368] distinguishes between 3 different levels of the digital divide: Technical access is the first level of the digital divide; the experience that can be had in digital space marks the second level of the digital divide; the third level of the digital divide is marked by the possibility to relate the digital experience to the non-digital realm, to accumulate more capital in and through the use of the internet. As an example, economic capital enables 1. Access to the Internet, 2. Better experiences in the digital space - because, for example, the Internet connection does not constantly break down - and thus also enables 3. Economic benefits from Internet use. Thus, for example, cultural capital and digital capital influence each other, as education can enable more diverse use of the Internet and thus more profitable use of digital resources. Personal capital ultimately controls how someone uses digital resources and thus the online experience.

The types of capital and the resulting digital divides and how they are dealt with provide the basis to interpret some of the facets of the virtual exchange between the ENS Porto-Novo and the PH Schwäbisch Gmünd.

3 The Project

In early 2021, we decided to conduct a virtual tandem with the School of Education of our partner university, the Université d'Abomey-Calavi, Benin, the École Normale

Supérieure (ENS) Porto-Novo, during the summer semester. The idea was to match students from the PH Schwäbisch Gmünd with students from the ENS Porto-Novo and to provide them with a list of topics they could discuss during weekly virtual meetings. The individual virtual tandem meetings would be framed by three plenary sessions: At the beginning, to explain the organization, in the middle, to conduct an interim evaluation, and at the end, to conclude the virtual tandem. In addition, the students were given the opportunity to take part in a virtual tour of the Lindenmuseum Stuttgart and in a public online reading on the topic of racism in children's books.

A total of 37 students participated, 25 from Porto-Novo, 12 from Schwäbisch Gmünd. We formed groups of three and one group of four, always with one student from Schwäbisch Gmünd and three students from Porto-Novo. Since it was clear to us that not all students in Benin had Internet access, we funded WLAN access for the duration of the project in Benin. The exchange during the plenary sessions, but also the exchange in the groups should take place via Zoom – this is what we had planned. However, providing the technical infrastructure was not sufficient to overcome digital divides; rather, in and through the project, new divides appeared that can be related to the different sorts of capital the students brought along.

I will analyze and interpret data stemming from the diary of one of the German students, I call her Anna, and I will also analyze a short interaction from the second plenary meeting. In order to analyze and interpret my data, I will draw on ideas of nexus analysis [5]. Social actions, from the perspective of nexus analysis, are nodes in the interplay of structure and action [11, p. 140–41]. At the heart of nexus analysis are three variables that constitute this node: The historical bodies of interactants, the governing orders of interaction, and the actualized discourses, understood as socially shared, normative, and therefore ideological bodies of knowledge that are also used to construct social inequalities [5, 12]. The historical body refers to the embodied experiences that are constitutive of a subject's actions and can be compared to what Ragnadda [6, p. 2367] calls personal capital. The concept of the interaction order stems from Goffman and refers to the interaction norms that influence ongoing interaction and are simultaneously reconstructed interactionally [13]; the interaction order can be analyzed by applying instruments stemming from conversation analysis [14]. Actualized discourses manifest themselves in the interaction in different semiotic forms – this aspect is less important in my analysis here; I will focus on the historical bodies and the interaction order.

4 Digital Divide: Example 1

The provision of Internet access via a WLAN was a necessary, but not a sufficient condition for meaningful participation in the virtual tandem. Not all students could tap into the same capital to participate in the virtual tandem and had the internalized abilities and aptitudes to interact with the students in Germany in this virtual format. This becomes evident in the diary entries of Anna, a student from Germany, who writes about her interactions with Orou, a male student from Porto-Novo, and Fabienne, a female student from Porto-Novo; the names have all been changed. About the first meeting, Anna writes: "The first video conversation with my tandem partners Orou and Fabienne was very cumbersome because the internet was unstable and we could

hardly communicate." Here, it is mainly the technological aspect that seems to hinder conversation. However, Anna writes about the second meeting: "The conversation on May 15 was conducted via WhatsApp video call. Mainly I could talk to Orou because Fabienne's internet was not stable enough to actively participate in the conversation." The platform we proposed, Zoom, has been abandoned in favor of the messaging service "WhatsApp," which German data protection officers have actually banned from use in institutional contexts. Here, the group is still intact. Fabienne, however, moves somewhat into the background. She is still mentioned in Anna's next entry. Anna writes about their conversation on June 4: "On the 4th [of June], a conversation with Orou took place again via WhatsApp. We found that WhatsApp is the best solution for us. Fabienne did not participate in the conversation." But in the next entry, Fabienne has completely disappeared: "On 18.06.2021, I talked on the phone with Orou via WhatsApp for about an hour." The other conversations that now follow take place only between Orou and Anna. Only in the conclusion does Anna mention Fabienne again when she writes: "The virtual exchange with Orou and Fabienne was a technical challenge. For the exchange, we used WhatsApp and a private wifi. Most of the time I talked with Orou on the phone in pairs, because Fabienne either had no time or no internet connection. The conversations in pairs without Fabienne were more pleasant, as communication was easier and the Internet connection was usually stable."

It becomes evident in Anna's entries that the students do not use the WLAN we provided. Instead, they use private access to the Internet. This seems to create a first divide: Orou seems to have the technological resources necessary to talk to Anna, Fabienne's access to the internet is much more precarious. Second, Orou has time to talk to Anna. Fabienne, on the other hand, seems to lack time to join the tandem interactions; maybe she has to use her time differently. Benin still is a patriarchal society, and there is a strong hierarchy between genders in Benin: Generally speaking, men enjoy much more freedom to act than women do. At the same time, success in education is gendered: Expected and mean years of schooling are much lower for women than for men [15]. Gender roles shape what Ragnadda [6] calls personal capital. Fabienne fell out of the tandem at some point: The lack of digital and, maybe, economic, cultural and personal capital prevented her from consistently joining, enjoying, and making use of the interactions with her German tandem partner. Fabienne fell into the digital divide.

Yet Anna, the German student, learned a lot about Benin, and the exchange with Orou allowed her to reflect on her own privileged position. For example, she writes, "Orou's stories made me realize that traveling and vacationing is a privilege [that] has become natural for me." For her, the tandem is a positive experience, as it is for Orou whom I will focus on in the next section. Orou's example illustrates how it is possible to benefit from digital formats, to build bridges across borders by adopting digital formats, yet it also demonstrates that successful use of digital formats in international cooperation hinges on students' successful mobilization of different sorts of capital. In order to illustrate this point, I will focus on the interaction order that was established during the second plenary meeting and the role Orou takes in changing it.

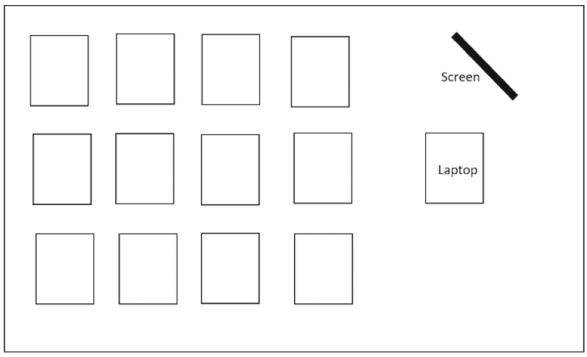

Fig. 1. Classroom Setting in Benin

5 Digital Divide: Example 2

The session has been recorded by the teacher in Germany, I call her Lieselotte, on her Zoom account. She is also leading the plenary session from which the fragment stems. The communicative ecology is, to use Luff et al.'s [16] term, fractured: Students in Germany are sitting at home in front of their computers. On the Beninese side, only one account is open during the plenary session, and the Zoom interaction is projected onto a screen via projector. The students and the teacher in Germany are visible on their own tiles, the class from Benin including the teacher share one tile. The setting in Benin is roughly as follows (Fig. 1):

The setting and the interaction order that is established suggest an asymmetry between Germany and Benin. Lieselotte, the German teacher, takes the turn, opens the session, and pre-structures the interaction; the language used is mainly German; the German students can more easily intervene and take the turn because they have their own tiles. The teacher in Benin is addressed only as a bystander and not actively involved in shaping the lesson. After the introduction, Lieselotte asks group 1, the group consisting of Anna, Orou and Fabienne, to relate their experiences of the virtual tandem:

LB wie sieht das AUS mit gruppe !EINS!.
how about group one
frau Agossou herr Orou und frau SCHMIDT;
miss agossu mister orou and miss schmidt
mö möchten sie eine kurze zuSAMmenfassung machn.
would you like to make a short summary
für die ANderen.
for the others
OR ((stands up))
LB ahA?
OR ((comes towards the camera, sits down on the desk in front of the camera))
FM ((stands up, walks towards OR, sits next to him))
OR ja äh HALlo (.)
yes äh hello

LB !HA!llo=*hello*
FM =äh mein nam (.) mein NAMe ist yacoBOU,
äh my nam my name is yacobou
also ich bin in der gruppe EINS mit äh (.) ANNa?
also i am in group one with äh anna
also (-) wir haben richtig mit äh den (fEST) angeFANGen,
also we have begun with the parties
also (.) ALles äh (.) läuft GUT?
also everything äh goes well
h° äh zur zeit haben wir NO NICHT keine (0.96) schwierigkeit geTROFfen?
äh at the moment we no have not met any difficulties

While Lieselotte's request to present a summary, formulated as a question, selects group 1 as next speakers, it leaves the choice of who should take the turn to the group itself. Neither Anna nor Fabienne self-select as next speakers. It is Orou who signals that he will answer; he organizes the self-selection in an embodied way by standing up from his desk. This self-selection is commented by Lieselotte with a change of state token "AHA". Orou walks towards the camera and sits down at the empty desk in front of the laptop. Fabienne follows his lead, stands up, too, walks to the front and sits down next to him. Orou then initiates a greeting sequence, briefly introduces himself with his first name[1], and then begins to relate what the group has done so far. In this segment, Orou challenges the asymmetry between Germany and Benin by adapting the role as the spokesperson of the group. He takes on this role by framing the existing hybrid setting, the empty lectern standing in front of the laptop, as a front stage, on which he performs. By exploiting the setting, and by tapping into his cultural and personal capital, his communicative and L2 competencies, he manages to fill this role skillfully.

Orou goes one step further and even changes the interaction order, as becomes visible in the next extract. After having heard what group one had discussed during their virtual meetings, Lieselotte asks:

LB (0.76) gibts noch erGÄNZungen?
are there any additions
(2.0)
OR also (.) ich weiß nicht obe (.) ob es möglich dass ich äh SCHMIDT also (0.47) beGRÜSSE,
right i don't know if if it is possible that I schmidt also say hello
(1.24)
GB ((laughter))
LB na !KLAR! ist das möglich.
of course this is possible
hh° hehe
GB ((laughter))
RG ja grüß sie DOCH?
yes go ahead and say hello

[1] In Benin, people often use the family name as a call name in more informal settings. Hence "Orou" is actually Yacobou's family name.

OR also (.) SCHMIDT?
okay Schmidt
(--) guten aBEND?
good evening
(0.63) wie ge:ht es dir.
how are you doing
isch hoffe GUT,
i hope fine
LB ja frau SCHMIDT?
yes miss Schmidt
er beGRÜSST sie grade.
he is just greeting you
°hh he he
he he he?
AS HA:llo.
Hello

Lieselotte asks if there are any additions from the group: "are there any additions?". After a short pause, Orou takes the turn and asks for permission to welcome his German tandem partner and thus to realize a communicative project that has not been planned by the course instructor; he thereby asks for permission to change the interaction order. Lieselotte gives her approval, and general merriment and laughter in the classroom in Benin ensues. As the realization of the greeting is delayed, the Beninese course leader prompts Orou to proceed. Orou does: "okay schmidt good evening how are you doing I hope fine." Yet the greeting remains unanswered, whereupon the German teacher intervenes and informs Anna that she was just greeted. Now the German student also answers with a "hello". This concludes the sequence for the time being.

With his suggestion to greet the tandem partner directly, the student challenges the previously established setting and the assigned roles. This is not at all expected, as the giggles and merriment of his fellow students suggest. He then creates a new interaction order in the semi-virtual space. Thereby, he also improves his own position: He could show that he is not only the one who skillfully answers the teacher's questions, but also the one who is able to communicate directly with his tandem partner even in this complex hybrid setting. This, again, only works because, first, he speaks German very well, i.e., he has cultural capital; second, he cleverly exploits the classroom arrangement and is not afraid to challenge the interaction order, i.e., he has the personal capital that is necessary here to achieve this. In the end, Orou stands out positively, and it would be quite possible that he might benefit from this interaction offline as well - whether in terms of grades or further promotions. Fabienne, on the other hand, who accompanied him to the front desk, remains silent throughout the interaction. She has not gained anything here.

6 Summary and Conclusion

I took our virtual tandem project as an opportunity to reflect on digital divides and the possibilities for bridging them. Our project, like so many other digital projects, was born

out of the necessity that Benin had become, in a sense, unreachable during the pandemic. We thus resorted to tools that were also used by other universities and that are considered promising by the DAAD and Erasmus+ for reasons of sustainability and easier participation. In order to demonstrate pitfalls and possibilities that appeared during our projects, I have chosen two short examples, and I have drawn on Ragnedda's theory of digital capital to make sense of the examples [6]. The analyzes and interpretations illustrate that providing a relatively simple digital infrastructure is not enough to overcome digital divides. First, students do not necessarily resort to this infrastructure for their group exchanges. Second, as Anna's diary entries show, there are additional factors that can render virtual exchanges challenging: Fabienne did not have time to participate, for whatever reason. In the case of this group, only Orou and Anna successfully made use of the virtual exchange. Orou, for example, benefited from the exchange and was even able to stand out during the classroom interaction. However, the mastery of such a situation requires the availability of different types of capital: knowledge, linguistic skills, personal experience. All these sorts of capital have to be considered if we intend to build sustainable bridges using online tools. Thus, international virtual exchange can only succeed if we carefully consider all the facets of digital capital in its planning and implementation.

References

1. Golonka, Ewa M.; Bowles, Anita R.; Frank, Victor M.; Richardson, Dorna L.; Freynik, Suzanne (2014): Technologies for foreign language learning: a review of technology types and their effectiveness. In: Computer Assisted Language Learning 27 (1), S. 70–105. https://doi.org/10.1080/09588221.2012.700315
2. Ehlers, Ulf-Daniel. 2021. „Leadership für die digital souveräne Hochschule." In Strategie digital. Magazin für Hochschulstrategien im digitalen Zeitalter 1(2021): 20–25.
3. DAAD 2021: Sustainable Mobility. How can we adapt internationalisation of higher education and science to the goals of climate protection? https://www.daad.de%2Fen%2Fthe-daad%2Fcommunication-publications%2Fpositions%2F&usg=AOvVaw1bl3W1-UOMlDel_IKO279g (15.08.2022)
4. Castells, Manuel. 2003. the internet galaxy: reflections on the internet, business, and society. Reprinted. Oxford: Oxford Univ. Press.
5. Scollon, Ronald; Scollon, Suzanne B. K. 2004. *Nexus analysis. Discourse and the emerging internet*. London: Routledge.
6. Ragnedda, Massimo. 2018. "Conceptualizing Digital Capital." Telematics and Informatics 35 (8): 2366–75. https://doi.org/10.1016/j.tele.2018.10.006.
7. Erasmus+. 2021. "Mobility project for higher education students and staff." https://erasmus-plus.ec.europa.eu/programme-guide/part-b-information-about-the-actions-covered-by-this-guidekey-action-1-learning-mobility-of-individualsmobility-project-for-higher-education-students-and-staff (15.08.2022)
8. Hatlevik, Ove E., Gréta B. Guðmundsdóttir, and Massimo Loi. 2015. "Digital Diversity Among Upper Secondary Students: A Multilevel Analysis of the Relationship Between Cultural Capital, Self-Efficacy, Strategic Use of Information, and Digital Competence." Computers & Education 81:345–53. https://doi.org/10.1016/j.compedu.2014.10.019.
9. Rudolph, S. 2019. Digital Media, Participation and Inequality: A Study on the Social Use of the Internet: Springer Fachmedien Wiesbaden.

10. Bourdieu, Pierre. 2012. "Economic Capital, Cultural Capital, Social Capital." In Handbuch Bildungs- Und Erziehungssoziologie, edited by Ullrich Bauer, Uwe H. Bittlingmayer, and Albert Scherr, 229–42. Wiesbaden: VS Verlag für Sozialwissenschaften.
11. Hult, Francis M. 2019. "Toward a Unified Theory of Language Development: The Transdisciplinary Nexus of Cognitive and Sociocultural Perspectives on Social Activity." The Modern Language Journal 103: 136–44.
12. Wohlwend, Karen. 2021. Literacies that move and matter. Nexus analysis for contemporary childhoods. New York, London: Routledge, Taylor & Francis Group (Expanding literacies in education).
13. Goffman, Erving. 1983. The Interaction Order: American Sociological Association, 1982 Presidential Address. In: American Sociological Review 48 (1), S. 1. https://doi.org/10.2307/2095141.
14. Rellstab, Daniel. 2021. Navigating complexities, exploiting shortcuts: Talking about culture as researchers and university educators. In: JPHE 3 (2), S. 79–103. https://doi.org/10.47989/kpdc107.
15. United Nations. 2020. The Next Frontier: Human Development and the Anthropocene. *Briefing note for countries on the 2020 Human Development Report: Benin.* https://hdr.undp.org/sites/default/files/Country-Profiles/BEN.pdf. (15.08.2022)
16. Luff, Paul; Heath, Christian; Kuzuoka, Hideaki; Hindmarsh, Jon; Yamazaki, Keiichi; Oyama, Shinya. 2003. Fractured Ecologies: Creating Environments for Collaboration. In: *Human–Computer Interaction* 18 (1–2), S. 51–84. https://doi.org/10.1207/S15327051HCI1812_3.