



Rhizomic communication practices bridging international students and the host society and beyond

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Abstract

Evidence suggests that the COVID-19 pandemic has significantly impacted international student communities while reflecting wider societal inequalities. This study in the Finnish context examined international students' experiences of the published national crisis communication and media usage during the first year of the pandemic. Using the national COVID-19 crisis communication practices as an example, we examined what kinds of strategies the international students deployed to access information in this non-English-speaking country and how they perceived the information communicated. Theoretically, we based the analysis on the theories of crisis communication and information inequality, which identify communication practices, such as language choice, that differentiate groups of people and impact their health outcomes. These are combined with rhizomic understanding, as reported by Deleuze and Guattari (1988/2020), of accessing media, and extended it to a mobile group of people (international students) living transnational lives. The data included interviews with international students studying at Finnish universities. The findings show that the students deployed five interlinked strategies to access information during the COVID-19 pandemic that highlight the heterogeneity of information and its usage, global asynchronicity of pandemic paths, and temporal changes in approaching information.

Keywords COVID-19 pandemic · Communication · International student · Higher education

Introduction

Internationalization in higher education has led to an increasing number of students traveling abroad to pursue education. In fact, during the 20-year period between 1999 and 2019, the numbers of international students tripled from around two million to over six million

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(Organization for Economic Co-operation and Development, 2021). This trend has challenged national and institutional contexts to respond and develop their policies and practices to welcome the inflow of international students. As a result of increasing student mobility, the last decade has witnessed a surge in analyses of the complex relation between education and mobility (Robertson, 2013; Sá & Sabzalieva, 2018; Soong, 2016; Ziguras & McBurnie, 2015) that propose to scrutinize international student mobility beyond the spheres of education policy and educational institutions and aim to simultaneously understand the policies and everyday spheres that define the lives of international students and the potential disadvantages they face (Tannock, 2018). Ultimately, this body of work leads to analyses of the state's role in framing international students' lives in the host countries.

Due to the increasing mobility of people, societies face issues of increasing language variation. This is especially so in countries where English does not hold an equal official status to the national language(s). Educational migration involves several policies and practices that together enable (or disable) the migration process. While previous research has tended to focus on the stage of entry to the host country or after graduation, Robertson (2013) advocated recognizing the overall study time as an unfolding migration process. During their studies abroad, international students may have varying roles, including student, worker, and migrant, which all have different framings for the international students (Maury, 2020; Robertson, 2013). Indeed, this also underlines the varying roles of the state in hosting mobile students.

One way of looking at the position of international students within a state is through media spaces. Globally, although the media does not often shine a negative light on international students, their ambivalent positioning (including hope for revenue, skilled future labor, and targets of racism/discrimination) creates varied media representations. Besides their representations in media, international students' media usage can contribute to their sense of belonging. For instance, Dwyer et al. (2021) suggested that both digital and legacy media structure students' sense of belonging in the host country. Furthermore, Amoah and Mok's (2022) study showed that during the COVID-19 crisis, informational support from the university was positively associated with international students' well-being. To understand how international students navigate their host societies in these technology-driven times, researchers have employed the digital journey concept (Chang et al., 2021; Chang & Gomes, 2017; Qi et al., 2022), which pinpoints the nuanced ways in which international students must adapt and cross borders digitally to function in the society (Qi et al., 2022).

In this study, we used the COVID-19 pandemic as a case to analyze crisis communication and how it dis/connected international students from/to their host country and beyond. Our aim was to understand what kinds of strategies international students in Finland adopted during the pandemic to obtain information. The study touched upon a particularly significant moment in mobile people's lives, a pandemic situation, showing how complex the situation was for a group of mobile students living their transnational lives. Earlier work analyzing international students' position during the pandemic showed that institutional policies regarding opening campuses affected international students by putting them and their local communities at a greater health risk (Whatley & Castiello-Gutiérrez, 2021). Qi and Ma's (2021) study in the Australian context showed that the government excluded or left international students to fend for themselves during the pandemic. Although we can argue that the COVID-19 pandemic is an exceptional event, we also perceive that such a crisis condition brings to the surface the underlining practices that produce inequalities, such as how different communication practices exclude people.

This study was situated in a sparsely inhabited northern non-English-speaking country, Finland, which has recruited an increasing number of international students to

its universities. For the past 20 years, Finland has strived to boost the number of international students studying at Finnish higher education institutions, particularly those with the aim of obtaining a degree (Jokila et al., 2019). This has led to an increase in the overall international student body in higher education institutions from over 6100 in 2000 to almost 23,000 in 2020 (Vipunen, 2022). This policy initiative was based on several rationales, including internationalization at home, the need to recruit skilled labor for economic growth and revenue generation since the introduction of tuition fees in 2017 (Jokila, 2020; Kauko & Medvedeva, 2016; Mathies & Karhunen, 2021a, 2021b). This has resulted in the need for the government to develop its policies and practices to better accommodate the expanding student body through a faster visa procedure and smoother transition to Finnish work life (e.g., Talent Boost program). The language choices in the provision of degree programs to facilitate internationalization have been significant. In the late 1980s, Finland opted to establish English-medium educational programs for international students instead of building a system that would initially include language studies in the country's official languages (Finnish or Swedish) and continue with subject studies (Jokila, 2020). The result of this decision is that Finland has the largest share of degree programs offered in English of any non-English-speaking European country (Wächter & Maiworm, 2014). Although these programs also offer opportunities to study Finland's official languages, language has become an issue for international students in Finland. The internationalization of higher education in Finland has been normalizing the use of English as the main language of instruction, for instance, in international degree programs (Saarinen, 2020). Consequently, the language of instruction is one language (English), but this is not the dominant language in the society and labor market (Finnish and Swedish; Mathies & Karhunen, 2021a).

Empirically, this study was based on interviews with international master's students studying at Finnish universities. In this study, our research questions are (a) what strategies international students used to access information and (b) how they perceived the information communicated. We used the COVID-19 pandemic as a window of time to analyze these two sets of data, aiming to illustrate both the national media communication and international students' descriptions of how they acted and accessed information during the pandemic.

Theoretically, the analysis drew from previous work on crisis communication and information equality (Hyvärinen & Voss, 2016; Liu et al., 2016; Ramandhan & Viswanath, 2008; Sellnow & Seeger, 2013; Viswanath, 2006). We analyzed the communication practices and language choices in the Finnish national crisis communication during the pandemic as a rhizome (Deleuze & Guattari, 1988/2020), referring to the unstructured and evolving connections international students (in Finnish universities) described in accessing media during the pandemic. These connections were made and remade in the middle of the evolving situation. Communication forms the basis of social practices with the creation and continuation of social institutions (Voss & Lorenz, 2016) and higher education institutions. Thus, communication practices mediate international students' sense of belonging in their local society. With its rhizomic theorization to international students and media, this paper contributes to the wider body of literature on how international students access media and digital spaces and content (e.g. Martin & Rizvi, 2014; Qi et al., 2022).

Studying international student mobility and media

To understand international students' communication practices during the pandemic, we begin by introducing the work on media and international student mobility. As internationally mobile students increase in number, they become more visible in media spaces. Researchers have analyzed representations of international students as targets of student recruitment marketing (Bamberger et al., 2020; Jokila, 2019) and their representation in media content (Brooks, 2017). Others have recognized international students as users of digital spaces and noted that international mobility is not only physical but also digital (Qi et al., 2022). Authors have described international students studying during this technology-driven time as having a digital journey (Chang & Gomes, 2017) that includes "digital placemaking" (Qi et al., 2022) when entering a new locality. Chang and Gomes (2017) referred to the digital journey as the digital transition international students make in moving from one country to another. In their study, Qi et al. (2022) found that international students in the Chinese context needed to make a digital transition to the Chinese context to facilitate everyday life in China (e.g., moving from traditional payments to an almost fully digital wallet).

A characteristic of international students' media usage is the transnational aspect of connecting to the host country/city and home simultaneously (Martin & Rizvi, 2014). Martin and Rizvi (2014) showed how Chinese students in Australia used digital devices to enact their translocal subjectivities. In Dwyer et al.'s (2021) study, digital connectivity to home provided emotional comfort while international students experienced a push to their discomfort zone when staying abroad. This is in line with Masud's (2020) argument that transnational media usage to connect with family and friends offers emotional support.

Language also plays a role in digital mobility in the host country. In the Australian context, locals perceive international students as having limited English skills and do not recognize their other skills (Bodis, 2021). Moreover, Qi et al. (2022) noted that international students' Chinese skills shaped their possibilities in digital spaces.

The outbreak of the pandemic transformed the digital spaces and information that international students were accessing. The pandemic conditions and the information shared within the local context also affected international higher education students. In other words, the host country's cultural, political, and economic norms and discourses greatly influenced international students' meaning-making of new policies and information (Crumley-Effinger, 2021). This suggests that international students in different host countries made sense of the rapidly changing environment according to how the host country responded to COVID-19.

Media and information during the pandemic

To develop an understanding of international student media usage, we built on work on information and crisis communication. During the pandemic, the role of information and media in disseminating (dis)information has been significant, and some have even referred to the situation as an infodemic, where too much information, both accurate and inaccurate, spreads, making it challenging to obtain the essential information (Pulido et al., 2020). Additionally, information flows have been global with international organizations, like the World Health Organization (2020), acting in visible roles, first, in defining the situation as

a pandemic and then in continuing to monitor the situation. The pandemic has also provided a platform for competing expertise, where medical experts, politicians, and media actors with different agendas and perspectives have commented on the situation (Zielonka, 2021). Therefore, from the perspective of information and communication, the situation has been complex. For instance, European communication experts called for “ethical and effective communication” to combat the virus and save lives (European Public Relations Education and Research Association, 2021). Besides this distinctive global character, local and national media spaces have been employed to inform and communicate pandemic regulations, making it essential for individuals to follow multiple media spaces.

There is a wide body of literature discussing crisis communication in conditions such as pandemics (e.g. Hyvärinen & Voss, 2016; Liu et al., 2016; Ramandhan & Viswanath, 2008; Sellnow & Seeger, 2013; Viswanath, 2006). Crisis communication often takes place during uncertain situations accompanied by time pressures. This was also the case at the beginning of the COVID-19 pandemic as the situation evolved. Crisis communication has a temporal dimension as theories distinguish different stages and phases of a crisis that underline the different communication needs (Sellnow & Seeger, 2013).

Focusing on crisis communication directs our attention away from biophysical events, which are often the center of attention, and towards analyzing the sociological perspective (Voss & Lorenz, 2016). It is through communication that people learn to see and understand the world. An event of the magnitude of the COVID-19 pandemic was not predictable, yet it did not come as a complete surprise, as there was evidence suggesting an event like this might happen at some point. Therefore, this study concerned the information conveyed, particularly how the risk, damage, or safety instructions were communicated. In this context, one cannot equate communication with language or linguistic information, as the very genesis of information occurs through and in the process of communication (see Hyvärinen & Voss, 2016; Sellnow & Seeger, 2013).

Communication forms the basis of social practices along with the creation and continuation of social institutions (Voss & Lorenz, 2016) and higher education institutions. Thus, for international students, communication practices mediate the sense of belonging to the local society. Crisis communication generates specific forms of expression as means of achieving mutual understanding. Crisis communication theories explain what should have been communicated, what was and was not prepared beforehand, and what did or did not get communicated (see Hyvärinen & Voss, 2016; Sellnow & Seeger, 2013). In other words, these theories help us understand the position of international students within the communication practices of their setting. From a constructivist perspective, the measures implemented are based on how the actors involved in defining and interpreting the information actually act (Voss & Lorenz, 2016). During the COVID-19 crisis, communication measures focused on preventing the spread of the virus and in providing everyone with a sense of agency in their life despite the uncertainty of the situation.

A concept related to crisis communication is informational inequality, which posits that different segments within a community have differences in the information they receive and the medium through which they receive it (Ramandhan & Viswanath, 2008; Viswanath, 2006). One of the social inequalities responsible for this gap among segments is literacy and language skills. Those with low literacy and/or language skills have barriers to receiving messages (Viswanath, 2006). This can be an issue among highly educated students living in non-English-speaking countries with small language footprints.

To understand international students' connectivity to different media spaces during COVID-19, we employed a rhizomic understanding of connections (Deleuze & Guattari, 1988/2020) students had with media spaces enabling them to approach student and media

connectivities as constantly evolving and complex. Employing Deleuze and Guattari's (1988/2020) understanding of a rhizome provided insight into how international students consume information during the early stages of the pandemic: "[a] rhizome has no beginning or end; it is always in the middle, between things, interbeing, *intermezzo*. The tree is filiation, but the rhizome is alliance, uniquely alliance" (p. 26). The pandemic produced numerous coping strategies, and international students did not act to find all possible information but rather exhibited various ways of connecting to media spaces (in the utopian sense, the "ideal" citizen would interact with the publicly communicated information and follow the given instructions). Deleuze and Guattari defined four principles that shape a rhizome. The first principle is connection and the second is heterogeneity, which refers to the ability to transform into something different. The third principle is multiplicity, referring to the multiple nature of a rhizome. The fourth principle is rupture, which refers to disconnecting and then assuming another form. Being rhizomic underlines uncertainty and unpredictability in life (Samson et al., 2022), which was evident during the pandemic as, even though the overall global situation was new, this was also a new situation for international students. Everyone was craving accurate knowledge to understand the situation and act in the best possible way. In their study, Sederholm et al. (2021) argued that the coronavirus's rhizomic information structure and the uncontrollable spread of information enabled the spread of misinformation.

Working with the rhizomic understanding led us to consider the relations as becoming and approaching it from the middle rather than aiming to define a start and finish (Deleuze & Guattari, 1988/2020). This idea is relevant in understanding how people acted during the pandemic as they needed to cope with the situation and find the information in an evolving situation. Media spaces and how people related to them reflect a complex rhizome of actors and devices producing news and information. In addition to news and other such agencies, public authorities communicated their activities and practices directly to the public primarily through websites and social media channels, such as Twitter. We conceptualized this complex media space as evolving and constantly reforming as information was updated and changed rather than being fixed.

Media space in Finland during the pandemic

For the Finnish government, similar to many other countries, the evolving pandemic conditions created challenges. The outbreak and global spread of COVID-19 was unexpected as it seemed rather distant from Finland in its early stages. The situation, however, developed rather quickly calling for quick policy responses in an unknown situation. The pandemic response developed over time from an intensified early shock stage to a temporally prolonged crisis, which called for new communication processes. The handling of the pandemic in Finland evinced the power of the state and authority in the country in an unforeseen way (Moisio, 2020). The instructions were heavily reliant on the Finnish Institute for Health and Welfare (THL) for health and safety research and recommendations during the pandemic (Moisio, 2020).

A year after the start of the pandemic, the Finnish government ordered an assessment of its crisis management (Deloitte, 2021). While the report noted that Finland was not well prepared for this grave crisis, the interviewed civil servants and politicians perceived its civil communication as one of the successful aspects. The report did not, however, discuss or analyze the language choices in the government's communication (Deloitte, 2021).

Finland is a bilingual country with Finnish and Swedish as its two official languages. According to Government Communication Strategy (Finnish Government, 2019), the objective is to provide information in the official languages and selected information in English: “Everybody affected by government decisions has the right to receive information on those decisions in understandable Finnish and Swedish¹. All key decisions will also be translated into English” (p. 9). From the perspective of mobile people (including international students), this issue becomes more complex in situations like the pandemic. The language discrepancies between the academic and societal contexts became more apparent during the pandemic and illuminated the need for more information in English (Jokila & Filippou, 2021).

In practice, the government followed this policy of communicating in the official languages and we found discrepancies in official sources of communication. We observed there were disseminations of official policies in Finnish while the authorities translated what they perceived as the most significant aspects into English. For example, the Finnish government employed many channels in their crisis communication, including regular briefings (TV, radio, and internet/news content) and communication from different ministries (Twitter and websites). These mostly targeted Finnish-speaking audiences. The government translated the content of briefings to English and communicated primarily through Yle’s (the national broadcasting agency) English content.

For the Finnish-speaking audience, TV shows constituted a significant communication channel which provided context and depth in understanding why the measures were necessary; shows such as *A-studio* (<https://areena.yle.fi/1-3251227>), for example, discussed the current situation of the pandemic. For the non-Finnish-speaking audience, there were fewer options for discussing measures as Finnish was almost the exclusive language on these communication forums. One English communication channel was “All points north,” a weekly podcast on life and news in Finland, but it did not focus solely on communicating pandemic-related information and aired only once a week.

The Ministry of Education and Culture, via its website, communicated instructions to the education sector, including higher education. These were predominantly in Finnish with a shorter English translation. Social media channels, especially Twitter, became official communication channels that the government and Finnish officials used to communicate and disseminate their messages quickly (Finnish Government, 2022). While highlighting the significance of international students to Finland and acknowledging their situation, the positioning of international students was first and foremost as students within an institution rather than, for instance, “citizens” in the country. Indications of this appeared in the Ministry of Education and Culture’s tweets. On its official account on 31 March 2020, the ministry noted, “Finland welcomes international students and researchers, in all circumstances.” It continued by stating, “[u]niversities and universities of applied sciences are there for all students and staff. Be active and stay in contact with your own institution.” This, in essence, pushed the responsibility for COVID-19-related information and communication about regulations to higher education institutions. While this was a new role for Finnish higher education institutions and obviously were highly involved in the distribution of information to international students, the role and practices of Finnish institutions are not the focus of this study and beyond the scope of this study fully examined.

¹ In this study, we do not focus on the role of Swedish in crisis communication in Finland.

The significance of accessing media spaces and up-to-date information became evident in spring 2021 when the international students' situation came into the spotlight in Finnish media due to outbreaks in exchange student communities. Subsequently, university student groups called for better communication of the regulations (Yle, 2021). According to a news piece, non-governmental organizations took the initiative to inform immigrants (including international students) in Finland about the regulations in English (Yle, 2021).

Method

Our research questions are (a) what strategies international students used to access information and (b) how international students perceive the information that was communicated. We are particularly interested in the international students' perspective in both questions. In our analysis, we focus on how international students engaged with media and news content. This is in line with Deuchar's (2022) argument for focusing on international students' practices, and thus their agency, rather than their experiences. Thus, this approach highlights international students' agency rather than perceiving them only as a vulnerable group of students.

Participants and interviews

We used interviews to develop an understanding of international students' strategies to access and perceive information during the COVID-19 pandemic in Finland. Specifically, we analyzed interviews with international master's students in spring 2020 ($n = 33$) and follow-up interviews in spring 2021 ($n = 23$). These interview data are part of a larger research project, *International students in times of crisis*, focused on studying international students' experiences and practices during the COVID-19 pandemic in Finland. We conducted interviews predominantly virtually via Zoom or Teams. Although conducting interviews online during the pandemic presented challenges for researchers (Howlett, 2022), meeting online also provided a safe space health-wise allowing reflection on the situation. When inviting respondents to participate in this study, we presented them with a privacy notice detailing how we would handle their data. We also provided information about the ethical steps we would take during the study, such as confidentiality and the right to withdraw from the study.

Participants were a highly varied group of students, including students with a (Finnish) spouse and/or child in Finland and single students. They were all registered to complete their master's degree at a Finnish university and perceived themselves as international students. We recruited interviewees on the basis of the willingness they expressed to take part in the interviews in a survey ($n = 192$) of international students in Finnish higher education institutions at the start of the COVID-19 pandemic. In addition to inviting surveyed students to take part in the interviews, we used a snowball method to increase the number of participants. We acknowledge a limitation of this approach is that the students participating in this study might not be fully representative of the international student body in Finnish universities. Table 1 displays the interviewees' demographic information.

In semi-structured interviews (Rubin & Rubin, 2005) lasting from half an hour to over two hours, we asked comprehensive questions about the participants' lives including their studies, financial situation, daily practices, and media usage during the pandemic. We selected themes according to what shapes international students' lives take during their

Table 1 Interviewees' demographic information

	2020	2021	
Interviews (<i>n</i>)	33	23	
Disciplines (*for the purpose of anonymity, as some fields are small, we have combined especially the humanities category)	Social sciences	10	8
	Technology	5	3
	Medicine	5	4
	Humanities	11	6
	Life sciences	2	2
Gender (*defined by the researcher)	Female	21	15
	Male	11	8
Citizenship	EU	7	4
	Non-EU	25	19
	Dual	1	0

studies abroad. In the interview guidelines, we included the main questions (Rubin & Rubin, 2005) and left space for unexpected practices and experiences that might appear due to the unforeseen situation in which we were doing the interviews. Four researchers produced the interview guidelines and conducted the interviews. We held meetings to discuss our experiences during the research project. Students varied in how much they shared about their media and news usage.

The interviewers hold different positionalities in relation to international students. As we were all experiencing the pandemic period in different ways, we approached the students first and foremost as humans facing this situation. This was evident in the interviews as we received feedback during the second interview round that the first interview round especially provided space for the interviewees to reflect on their experiences—for some, this was the only possibility for doing this. Our team of interviewers include three post-doctoral researchers and one Master's students. One of the post-doctoral researchers is a native Finnish while others can be seen as international scholars/student in Finland with experience of the country context. This can be seen both as drawback and merit as our respondents may have related to us as interviewers differently depending on how close to their experiences they may consider us.

Analysis

Our data analysis followed abductive content analysis (Tavory & Timmermans, 2014) to focus on media and communication sections of the interviews alongside the media data points. Abductive content analysis refers here to an analysis process that goes back and forth with data analysis and theoretical conceptualization. In other words, during the data analysis, it was observed that we need to combine different theoretical understandings to conceptualize the studied phenomenon comprehensively. We employed NVivo to analyze the international master's students' usages of media during the pandemic. The initial phase involved reading through the interview transcripts and marking all discussions of media and news content use and communication. After this initial stage, it became clear that the international students' reflections and practices varied and were rhizomic, evolving, by nature. From the initial coding, we developed themes on how international students connected to media and news and their strategies to access information. We condensed

this list to five main themes: (a) connections and heterogeneity of information, (b) creating rhizomes of trusted information, (c) asynchronous and asymmetrical pandemic paths, (d) ruptures in information rhizomes, and (e) creating new rhizomes. These identified themes bring into surface the different strategies and issues related to international students and their connections to the media.

Findings

Connections and heterogeneity of information

For understanding the communication practices at a grassroots level, we analyzed international students' strategies for accessing and understanding publicly communicated messages during the pandemic. One of our main observations relates to the connections international students made to media and their heterogeneity in the middle of the pandemic time. As a main strategy for accessing information during the pandemic, most participants indicated that they followed Finnish media during the pandemic. They mentioned Finnish national broadcaster Yle most often as the source providing publicly communicated information in the official languages, Finnish and Swedish, as well as Sami (language of the Indigenous population of Finland). Yle's (2022) website in English provides selected "top news" content compared to the broader content on its Finnish website. Only a few students mentioned following city-level news. This is understandable as the pandemic measures and information flows in Finland were led nationally (Moisio, 2020).

Since it [COVID-19] got to Finland, every day, if not a couple of times a day, I have to check Yle and Iltalehti, and MTV Uutiset [MTV News, Finnish commercial broadcasting channel] (Elisabeth)

In the students' reflections, it was evident that there was not a singular media space or structure from which they would gather information; rather, the students' strategies varied in the kinds of information they accessed and, in this way, developed rhizomic connections that were evolving (Deleuze & Guattari, 1988/2020) to different media spaces and country sources. The students' needs for information also varied. While some international students were adjusting to the current news space, others searched for more information.

When identifying international students' connections to information about the pandemic, relations beyond national borders were very evident. It is possible to characterize this media space as transnational. Most of the international students indicated they followed Finnish news, but also news from their "home country" and/or some from third countries. For instance, Max explained the following:

I used to check COVID statistics for the US, Japan, Kuwait, Turkey, the UK... These are the countries that I have family and friends in. Every day, before I sleep. And getting nightmares during that sleep.

The tracking of information in multiple countries also points to international students' need to maintain their connections to family and the home country.

I'm more concerned about the traveling restrictions, and like, if I need to do (the) Corona test when I reach [transit country] or when I reach Finland and that stuff, and that's fine, but if I will follow up [news] like every day... Because in summer, I was following Finland news and [home country] news. (Becky)

This extract illustrates the very practical informational needs of international students to live their mobile lives. In short, international students needed COVID-19-related information in both their home and host countries. However, this also demonstrates that while international students needed to keep up with information in their host countries, they could compartmentalize it to focus on a specific aspect (e.g., COVID-19 testing requirements) or timing issue (e.g., when traveling).

Creating rhizomes of trusted information

During the early days of the pandemic, a lot of information on COVID-19 was available (Pulido et al., 2020) that created the need to assess the accuracy of this information. In the rhizomes of media spaces, we observed here that our respondents were aiming to find and be connected with trusted and accurate information that turned out to be difficult in a constantly evolving situation. In the interviews, students considered Finnish news comparably reliable, as Kristen reflected:

When I compare the stuff, like how the schools were opening or closed, or like different approaches to the same situation. In Finland, I felt like that at least Yle had a feeling of credibility, which is like zero right now in [home country].

The participants perceived the global media space and private sources of information as scattered and constantly changing. While some were satisfied with the information they received, others recalled having difficulty in assessing the available information's accuracy. For instance, Anna discussed how she searched and handled information from different sources:

Then after the quarantine starts, I start to look at Twitter a lot. Try to reach the good information. I mean, because there is really, really bad information, wrong information about this outbreak. Also, the people that I talk to, like my friends and my parents, they were all telling wrong information. For example, I don't know, it's just an example but... if you eat an apple, Coronavirus will die... [laughing] (---) I was kind of trying to find correct information from Twitter.

In Anna's reflection, she highlighted the varied sources of information, including social media and social networks. Marcus similarly stated, "I was following in the beginning, like from the news [home country and Finland]. But then somewhere... I don't know exactly when, but I just realized that I get different information every day." Anna and Marcus both assessed the accuracy of the information they obtained from many sources. Receiving accurate information during the pandemic was integral as copious information was available, including false information (Pulido et al., 2020). Thus, from the perspective of accessing and understanding information and communications, the situation was complex throughout the pandemic.

Asynchronous and asymmetrical pandemic paths

The knowledge some of the international students received from their family and home country connected asynchronously with the information they received in Finland. Family relations were an aspect that blended in with the news spaces and the asynchronous and asymmetrical paths of the flow of pandemic information globally. Joey's illustration in

spring 2020 shows how the spread of news and handling of the pandemic early on entangled with her family's future study preferences:

My mom worries about here, and she even told me, okay, after this master thesis to go back and work in [home country] because (of) what she heard about here. They don't hospitalize the patients, they don't really do the strict quarantine, self-quarantine. It's something (that) sounds very vague, very difficult for, imagine like only can stay quarantined without control. (---) Just after the midsummer, I just read the news yesterday that it increased like 11 cases but that's not really serious like (in) America. One thousand cases per day/in a day, crazy.

She explained her local experience of COVID-19 while her mother understood the situation according to the news she heard from other European countries. In this example, even though Joey said at the beginning of the interview that she herself did not fully know the situation in Finland, she assured her mother about the safety in her current place of residence. This highlights the locality of her current residence and its context and how local situations and experiences reflected the situation. Additionally, cultural differences were apparent in Joey's reflection as Finland did not impose heavy, government-monitored restrictions (e.g., curfews) but rather issued recommendations that the citizens closely followed (Moisio, 2020). Even though some respondents noted that Finland and, by extension, Europe were not active enough with their measures to combat the pandemic, in the Finnish context, the adopted measures and the visibility of state power were unprecedented (Moisio, 2020).

Countries took many different paths in handling the pandemic situation. Consequently, international students needed local knowledge and the ability to access information to handle the situation. The next extract shows the discrepancies in regulations and the uncertainty of the situation that one of the international students experienced. In the Finnish media, the issue of masks was highly contested and discussed at the beginning (and masking later became a regulation).

Even sometimes when I go to the supermarket and I see people not wearing—especially here in [area of stay], people were not wearing masks, and everywhere in the media, even people you know, like and in the States and in the UK, like even like people being online, they would be wearing masks and that was kind of like quite a gap and this belief almost like I go out and it's different; I got here (Finland) and it's different. I wasn't able to know what reality is. I was like, okay, the people here, like physically here, they might be the crazy ones. At some points, and the media is the... I was believing in the media. (David)

Living in a situation where the information and practices were opposing created confusion about how to act. That was particularly evident in the international students' lives when they were connected to at least two contexts and sets of policies and practices. While there were discrepancies in the actions countries took and how the media informed about the situation, there was also satisfaction in how Finland handled the situation:

Well, what I have seen in the media has been (---) somewhat positive. Like how Finland is handling this situation and how we kind of control the whole thing and stuff like that. It's been quite encouraging and I think that I have seen a lot of positive reactions from the government; that's good. (Frans)

Especially for students from countries where the COVID situation was more severe, they experienced Finland as a safe place and had trust in the system.

Ruptures in information rhizomes

Studying abroad provides an opportunity to learn and acquire new language skills. However, gaining accurate and timely information during a health crisis is essential (see Hyvärinen & Voss, 2016). In this study, we observed ruptures in information rhizomes on the pandemic in Finnish context as some participants commented on the limited information in English by indicating that while there was information, the extent of it was not the same as the information available in Finnish.

I've been in touch with news outlets online. I read—when it comes to Finland, I read Yle's English site, which I think is quite good. At least I get the information that I need. And then if there is something, a more catchy topic, which has not been written in English, then I just open the Finnish site, or Swedish ones, because I can read Swedish. But Finnish, then I just use Google Translate and I think I can get the meaning behind it. So, I would say, when it comes to news, it's mostly online media. (Fabian)

I don't really read papers, but I just check the title of what they are doing now and it's not only in Finland, because actually, the news in Finland is not available in English. They have small, some small articles in English, but yeah, so every time I saw the title, I read the news in English in Finland. If it relates to COVID or vaccine or if they have some kind of, like, some cases in [city where I am] that I need to be careful, if they give any hint where you shouldn't go to or something like that. So, news about border, about vaccine, I follow it if they have available English news in Finland. (Joey)

The above extracts vividly show that some international students took extra steps to find the information they needed in English, pinpointing the rhizomic nature (Deleuze & Guattari, 1988/2020) of the media and information consumption. They translated more extensive information about COVID-19 from Finnish, thus relying on the accuracy of the translation tools.

In pandemic situations, timely information and instructions are at the core of the crisis communication and are crucial to mitigation (Hyvärinen & Voss, 2016). The above comments also demonstrate the informational inequality that international students experienced in Finland in that they were not fully able to access or contextualize the information on COVID-19. This increased their health risks compared to those who were able to access and understand the publicly communicated information in Finnish. This pandemic situation links with previous research showing the difficulties international students face in living and working in the Finnish society with limited Finnish language skills (see Alho, 2020; Korhonen, 2015).

Creating new rhizomes

Another issue during the pandemic was the increasing following of media content at the beginning of the outbreak (Ytre-Arne & Moe, 2021). The focus for many at that time was the number of cases followed by the progression of vaccination. We can identify ruptures (Deleuze & Guattari 1987/2020) in the international students' connections to the different media spaces as the pandemic situation evolved. This resulted in the creation of new

rhizomes to media spaces that were usually more limited than at the beginning. In the interviews, many students recalled that they needed to stop following the news to the same extent or significantly limited it due to its effects on their mental well-being. This is an important observation in a situation where people require information.

Yes, before, honestly, I followed a lot, but I saw that I am getting insane. Everywhere you know there are pictures of people, the hospitals are full, and so people are dying, so it affected me in a bad way and honestly, it affects my dreams when I was sleeping as well. So then, I gave up watching like (---) So not like... in April, I was like, okay, check every time. But now, no. Just once a day, it's enough for me to check the news (what's) was going on and that's all. (Amanda)

I was following the news a lot, but then at some point, I just decided not to, because... especially when they are not knowing, when they stopped knowing the chains, like what is the person, who infected who... I just felt that the numbers are gonna keep increasing and this is giving me anxiety more than it's helping me, so I just kept checking every now and then the regulation and the advice from THL. (Kirsty)

Amanda's and Kirsty's extracts also show that the students were continuously following the number of cases and news images. As the pandemic situation persisted, students started to adjust to the situation and to some extent distance themselves from the news space. This kind of turn from global and national news coverage to focus on very individual and local life can be seen as a way for people to function (Ytre-Arne & Moe, 2021) or a coping mechanism. This is in line with studies showing increases in mental health concerns in international students during the COVID-19 pandemic (Koo, 2021; Koo & Nyunt, 2022).

The international students' attachment to news coverage clearly had a temporal dimension, in line with Sellnow and Seeger' (2013) temporal framing of communication in a crisis. Many international students recalled being very active in following the news at the start of the pandemic but then later reduced or even stopped their news consumption due to the negative effects they experienced on their mental health. This affective dimension of the news is significant. This phenomenon of excessively consuming negative media content is called doomscrolling (Price et al., 2022), and it gained notoriety during the pandemic for being particularly relevant. Interviewees highlighted that they followed the numbers of positive cases or deaths. While we may expect following the local media space to contribute to a sense of belonging to society, it is possible to see pandemic media consumption and particularly avoiding such negative content as a situational strategy (Ytre-Arne & Moe, 2021). Mathew reflected this:

The health system (in my home country) is collapsing, the government is inefficient. That was very depressing in a way because you didn't get any positive news. Everything was negative, but obviously, I was always paying attention to the news, keeping up-to-date with what was happening. So, I took the media very seriously in the sense that I needed to be up-to-date with the situation. At the same time, it was very depressing to turn on the internet, to read the newspaper, to see all the bad things that were happening.

What we found was that due to the asymmetrical temporalities of the pandemic, following news from back home did not provide what Dwyer et al. (2021) observed as the comfort and ease the home provided but rather contributed further stress and worry.

The rhizomic nature of connecting to or disconnecting from media was also evident in Mary's reflection on "outsourcing" the connections to media and relying on personal

networks that were following the current information: “No, I don’t want to. I sometimes ask my boyfriend, how many percent is vaccinated already, or how’s the situation in Finland?”

When the pandemic situation evolved, the international students also started to focus on the development of vaccines and the pandemic, to some extent, started to become one aspect of everyday life without changing people’s behavior that much:

My behavior doesn’t really change anymore, at the moment. I’m careful. I have my mask; I wear it in every public place – supermarket, train. Now, if they would say the cases are rising, I mean, I could put on two masks. But there’s not much more I can do. (James)

This shows the temporality of the pandemic: the students started to get used to it and evolved their media and information consumption and their personal practices with the ebbs and flows of the pandemic. For international students in Finland, this meant they generally followed the recommendations from the government as compared to many other countries, Finland did not impose heavy, obligatory measures in its COVID strategy. They offered recommendations and suggestions (Moisio, 2020) that were efficient as the majority of residences mainly followed them.

Discussion: making sense of the mess

In this paper, we have discussed the strategies international students used to access and perceive information during the COVID-19 pandemic. We base our argument on crisis communication (Hyvärinen & Voss, 2016; Sellnow & Seeger, 2013), information inequality literature (Ramandhan & Viswanath, 2008; Viswanath, 2006), and the rhizomic nature of accessing information (Deleuze & Guattari, 1988/2020). We used these theoretical frameworks as we analyzed the communication practices and language choices in Finland’s national crisis communication during the pandemic and how international students engaged with them.

In our study, we could observe asynchronous and asymmetrical pandemic paths that contributed to the information international students were accessing not only in Finland but also beyond. This study outlines the simultaneity of different media and digital spaces (Martin & Rizvi, 2014) and digital in-betweenness (Qi et al., 2022) in which the students were involved and the important health-related information they accessed during the pandemic. This study, then, confirms that studying abroad is not only a physical transition from one locality to another but also a digital journey (Chang & Gomes, 2017) that has a significant transnational character (Martin & Rizvi, 2014) in the simultaneity of media spaces used.

We found that COVID-19-related information was available and was communicated differently to different language groups in the national media space, and some international students needed more information about the local Finnish context in English. This supports the theory of information inequality in the health communication literature positing that community members receive information differently and use diverse media to receive it (Ramandhan & Viswanath, 2008; Viswanath, 2006). One of the social inequalities responsible for gaps (differences) among groups in terms of the information they receive and their understanding of it is the level of literacy and language skills. Those with low literacy and/or language skills face significant barriers to accessing information and understanding its meaning (Viswanath, 2006). This can present an issue for highly educated people living

in non-English countries with small language footprints. In health-related situations, these barriers to accessing and understanding information lead to increased health risks for those with low literacy and/or language skills (Ramandhan & Viswanath, 2008; Viswanath, 2006).

Although we have shown the significance of language in communicating information during a crisis, through our analysis, we hope to have shown why it is too simplistic to discuss national communication practices merely as the language of choice. We suggest that international students' connections to media spaces form a rhizome (Deleuze & Guattari, 1988/2020), referring to the continuously evolving and unstructured connections international students (in Finnish higher education) describe in accessing media and making sense of the messages. Using the rhizome concept to understand media communication and related practices for accessing information enables us to move beyond a structural understanding of top-down direct communication practices and identify many nuanced strings individuals use to connect to information and communication.

We observed that as the pandemic persisted, international students started to adjust to the situation and began to avoid accessing information. This is also instrumental in understanding how to plan the dissemination of crisis communication during a situation like a pandemic. While Sellnow and Seeger (2013) suggest there are stages or phases that underlie the different communication needs in a crisis, the evidence here suggests that these were not so clear or linear; where one moves from one stage or phase into the next. Rather, the evidence points to an unstructured and constantly evolving process of capturing and understanding information on COVID-19. We argue Deleuze and Guattari's (1988/2020) rhizome concept is helpful in understanding how international students access communication during the COVID-19 pandemic as their four principles (connection, heterogeneity, multiplicity, and ruptures) of a rhizome were clearly visible across the five themes. From a temporal aspect, what perhaps was the clearest was consistent and constant changing in information gathering. There was a constant tension between the need and desire for information, being able to access accurate information, the need to take a break from information for mental health reasons.

By showing how mobile people connect to various local, national, and transnational media and information in diversified rhizomic ways, this study provides theoretical implications for communication practices for international students. While Amoah and Mok (2022) identified a positive association between the university's informational support and well-being, our findings show the more nuanced and complex ways the students were connected to the national and international media.

International students gained information from official Finnish and international media as well as through private contacts. This created a situation where there was contradictory information and individuals needed to assess the information's accuracy. From the perspective of effective crisis communication (Sellnow & Seeger, 2013), this is problematic as international students, like everyone else, need accurate information.

Conclusion

COVID-19 has had a profound impact on international higher education and societies in general. Many international students were stuck in their host countries in lockdowns and border closures while others might experience difficulties after returning back home. COVID-19 challenged governments, institutions, students, and staff. Its effects are still

ongoing and likely will carry forward for the foreseeable future. But there are a few key takeaways that the crisis is another evolution of COVID-19 or another crisis altogether.

First, the practical implications of this study suggest the need for accurate, timely information and information in languages that reach all residents. This includes international students. This means imbedding within the crisis communication strategy, nationally or institutionally, a plan to ensure clear and up-to-date information is not only available but also accessible (e.g., in multiple languages) and complete (i.e., not shortened versions of the official languages of a country). Additionally, the observation of students restricting the information flow in the prolonged crisis condition highlights the need to consider appropriate communication channels and means of reaching the students.

Second, international students will access transnational information and communication networks in a time of crisis. In a situation like COVID-19 that was constantly evolving and involved serious medical complications, national and institutional communication networks, practices, and strategies may not be enough. Host institutions and countries have a duty to care for international students as they would their domestic students. This means ensuring the same information available to local students is just as accessible to their international student populations.

Third, from a theoretical perspective, Deleuze and Guattari's (1988/2020) rhizome conception was helpful in making sense of how international students accessed and perceived the information provided during COVID-19. The four principles of a rhizome (connection, heterogeneity, multiplicity, and ruptures) made clear how unpredictable and constantly changing the environment was during this period. Each of the five identified themes showed evidence of this constant and every changing temporal quality; there was always a need for updated information due to the constantly changing environment which required students adjusting their sources and amount of information consumed. There were also clear evidence of international students experiencing informational inequality (Ramanathan & Viswanath, 2008; Viswanath, 2006). They experienced higher health and safety risks largely due to lower Finnish literacy and language skills than the general population, the language and literacy skills of the host country. As this study involved international students studying at Finnish universities during the pandemic, further studies are needed to elaborate on the phenomenon in other countries. As noted previously, our method of recruiting participants in interviews might not have led to a full representative of all international students in Finland. Lastly, expanding the analysis of media usage to local students would increase our understanding of the higher education student population as a whole and the strategies they used.

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Declarations

Conflict of interest The authors declare no competing interests.

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