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SCHOOL GEOGRAPHY UNDER COVID-19: GEOGRAPHICAL KNOWLEDGE IN THE GERMAN FORMAL EDUCATION

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ABSTRACT

This paper aims to explore some of the changes affecting the teaching and learning of secondary geography as a result of the COVID-19 pandemic. In doing so, it sets a focus on geographical knowledge and its alteration in times of extraordinary measures to diagnose its challenges. Against the background of current debates on competence- and standard-based education from the sociology and history of education as well as from geography education, problem-centred interviews served to explore the perspectives of 15 German secondary school teachers on the alterations their Geography teaching suffered since the COVID-19 lockdown. Analytical categories were general challenges, communication with stakeholders, educational media usage, and the role of COVID-19 in geographical knowledge acquisition. The results uncovered, along with systemic challenges, two main areas in need of consideration to redefine subject-specific knowledge in times of competence-based education, namely geography teachers' professional identity and perspectives on the role of geographical competencies.

Key words: Geography education; Germany; interview; COVID-19; geographical knowledge; powerful knowledge

INTRODUCTION

As a reaction to the COVID-19 outbreak, the German federal state of Saarland closed its schools on 16 March 2020. Within a few days, the remaining 15 states also closed both public and private schools. The preventive measures led to various state-level decisions regarding the continuation of formal education both in primary and secondary schools. For example, the state of Lower Saxony announced on 27 March 2020 the introduction of a school cloud (*Bildungscloud*) for homeschooling starting 15 April 2020 – a measure still being implemented at the time of writing. For teachers, the restrictive measures stand for an unprecedented involvement of the state into the core

of their teaching activity. However, additional information beyond the restriction often remained vague and ministries of education tended to delegate responsibility to school heads and, implicitly, teachers. A climate of insecurity became tangible in every conversation with teachers as pressure grew and support remained absent.

As March marked the end of teaching practice, the authors – all involved in geography teacher training – attempted to channel the conversation towards matters of geography teaching and learning. Thereby, it became apparent that a combination of the school as an institution along with its regulative framework (ministries, decrees, central final exams, and curricular requirements) as well as the novel

formats of communication eclipsed the subject of geography. Teachers suddenly saw themselves as educators with their subject playing merely a marginal role and seemed preoccupied with providing their students with adequate educational media. This intriguing development led to several questions: What is the role of geography in non-physical teaching formats? What is the impact of digitised teaching on Geography? How do novel formats of communication and organisation impact geography as a subject both at the institutional and personal level? What are the effects of online education on lesson planning, particularly concerning the choice and usage of educational media? Moreover, most importantly, what are the adverse effects of teaching during COVID-19 lockdown on school geography—an already weakened subject in the German canon of subjects?

This paper aims to offer a first insight into the effects that the COVID-19 lockdown had on the teaching of geography in selected German federal states. Thereby, its main focus is threefold. First, it targets the effects of the institutional framework and regulations on the teaching of the subject geography during the lockdown. Second, it takes a closer look at educational media choice and usage – a seemingly central area of concern, according to the information provided by teachers prior to data collection. Third, it zeros in on geographical learning by putting COVID-19 into the spotlight and engaging in discussions with teachers regarding its relevance as geographical content within the framework of geographical concepts. Before introducing the results, the paper first familiarises the reader with relevant features of German school geographies and introduces the research methods as well as the sample. Following the discussion, concluding thoughts close the paper.

SOME COORDINATES OF GERMAN SCHOOL GEOGRAPHIES

Education in Germany lies with the 16 federal states. In consequence, each federal state defines, among others, the duration and types of schools for each educational level. Primary education, for example, extends to the first four years of school education. However, in the

states of Berlin and Brandenburg, the first six years of schooling constitute the primary education. Similarly, the states instituted different types of secondary schools following more vocational (*realschule*), academic (*gymnasium*), or inclusive (*gesamtschule*) profiles. The tenth school year marks the end of lower secondary education, followed by two years of upper secondary schooling. There are specific curricula for each school type and federal state. In consequence, the 16 states implemented a large number of geography curricula, which leads to a multitude of school geographies. Variations, however, reach beyond content and affect time resources with school geographies being taught as an independent subject in at least a half and a maximum of two weekly hours in lower secondary education or as part of compound subjects, such as social studies or social science.

Despite the multitude of curricular normative documents, school geographies across the federal states display some similarities. For example, all curricula follow a thematic-regional approach where teachers choose (or are indicated to) regional examples to teach thematic content. Traditionally, school geographies tied, for example, megacities, urbanisation, and rainforests to Latin America. The Curriculum 2000+ (DGfG 2002) initiative achieved the first postwar approximation on the content level by recommending Germany for the fifth and Europe for the sixth grade as exemplary regions and spaces. Substantial change, however, occurred only in the aftermath of the 2001 PISA shock. As a reaction to the modest results, the education system of all states underwent a substantial reform consisting of a change in paradigm along with a shift towards output-orientation. Moderate constructivism aimed to replace the culture of instruction. Concurrently, the core subjects (e.g. German language and mathematics) received competence models that rested on competences and standards.

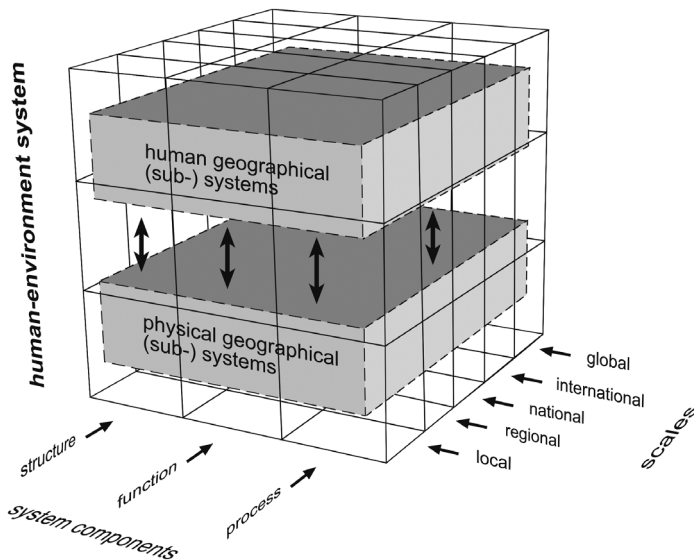
As competence models and standards remained limited to core subjects, geographers took on the initiative to develop their competence model and standards. The German Geographical Society published in 2006 its Educational Standards in Geography for the Intermediate School Certificate prescribing six areas of competence, namely subject-specific knowledge, spatial orientation, gathering

information/methods, communication, evaluation, and action (DGfG 2012). Subject-specific knowledge and spatial orientation constitute, according to the Standards, school geography's main areas of competence with the remaining four areas establishing links to science (gathering information/methods, evaluation) and social science (communication, evaluation, action). A varying number of standards for each area of competence in part introduces a certain progression and establishes minimal as well as regular/average standards that students should achieve by the end of the tenth grade. Germany, however, is only one of the many examples of competence-based and standardised education. As most educational systems embraced (moderate) constructivism and implemented a competence- and standard-based education, school geographies across the globe also formulated standards (e.g. Bednarz *et al.* 2014) and areas of competence.

Schöps (2017) documented the progressive implementation of both the competence model and the standards into the curricula of the 16 states. The result is curricula that complemented the prescribed content by the (slightly) amended competence model and some standards. For example, the state of

Berlin implemented all six areas of competence under different names (e.g. decoding systems instead of subject-specific knowledge). Overall, the 2001 PISA shock acted as a catalyst inducing unification and reducing the diversity of geography curricula at the state level.

Subject-specific or geographical knowledge lies at the heart of the competence model (DGfG 2012) and requires a closer exploration. In Great Britain, the curricular documents rest on a set of geographical concepts negotiated between academic geographers and geography educationalists (cf. Taylor 2008). The German standards entail a normative set of basic concepts that prescribe a systemic perspective (human-environment system). Along with the physical geographical and human-geographical (sub-) systems, the standards also prescribe system components (structure, function, and process) and scales (local, regional, national, international, and global) (cf. Figure 1). In addition, Wardenga (2002) defined, based on the history of German geographical thought over the decades, four types of space categories (space as a container, relation, perceived space, and constructed space) that added further layers to the basic concepts around the human-environmental system. The aim to equip



Source: DGfG (2012).

Figure 1. Basic concepts in German school geography.

young individuals with the ability to understand complex human-environment systems and, through their actions, contribute to altering them to secure a more sustainable future aligns German school geographies with the recommendations of the International Charter on Geographical Education published by IGU's Commission on Geographical Education (IGU CGE 2016) and the Lucerne Declaration on Geographical Education for Sustainable Development (Haubrich *et al.* 2007).

While both the constructivist approach as well as the competence- and standard-based education brought considerable improvements to formal education in general, and every subject (including geography) in particular, sharp criticism comes both from the sociology of education and history of education.

The sociologists of education Michael Young and Johan Muller (2010) positioned current competency-based education within a historical framework of educational policy based on the normative documents (curricula) they implemented. The result was the three future heuristics with Future 1 (F1) curricula referring to traditional and content-based documents delivered by a teacher containing knowledge that was considered to be given and not negotiable. Knowledge acquired based on such curricula was considered to be the knowledge of the powerful, indicating unequal access to education and, in consequence, to social mobility. As a result of a series of social movements (e.g. post-colonial, feminist, and liberation movements), formal education became increasingly available for everyone. However, neoliberal pressure, according to Young and Muller (2010), contributed to shifting objectives aiming at labour-market-ready graduates equipped with specific skills that often remained detached from subject-specific knowledge. Knowledge, in the case of this type of curriculum called F2, became increasingly arbitrary and served primarily skill acquisition instead of subject-specific learning. For example, an F2 curriculum might reduce the role of geography to a caterer of skills, such as reading graphs (e.g. climograph, age pyramids) or giving presentations. Thereby, geographical knowledge became irrelevant, and the content arbitrary. Without calling for a return to an F1

curricular model, Young and Muller (2010) argued for the implementation of an F3 curriculum that remained competence-based, but fostered powerful knowledge—a knowledge deeply rooted in the expertise of specialists.

Over the last years, some geography educators dedicated special attention to the three futures heuristics along with the conceptualisation of powerful disciplinary knowledge (cf. Lambert *et al.* 2015; Uhlenwinkel *et al.* 2017) and powerful geography (Boehm *et al.* 2018). Apart from some exceptions (e.g. Maude 2018), most contributions define powerful disciplinary knowledge by exclusion and stress what it does *not* entail. Also, empirical evidence supporting the added value of the existing powerful disciplinary knowledge concept remains to be delivered. Viewed in light of Young and Muller's (2010) initial conceptualisation, German school geography curricula seem to pertain to an F2 type resting on specific prescribed content. Further empirical work is yet to define curricular typologies in German school geographies.

Historians of education also raised criticism at the progressive erosion of (traditional) disciplines in favour of generic skills and competences. Reh and Pieper (2018) investigated the loss of disciplinary identity of German Language as a school subject across the decades. Bagoly-Simó (2017) analysed the subject-specific knowledge prescribed in the curricula of various European countries and observed a progressive loss of subject-specificity or de-disciplinisation. In most cases, geography caters to several competencies that lie outside geography's primary focus at the expense of geographical knowledge acquisition. Particularly in the context of school geography, another study (Bagoly-Simó 2020) proved a progressive substitution of geographical knowledge in German school geography by sustainable development. Struggling for survival in the mandatory canon of subjects, German school geographies progressively hijacked education for sustainable development as their primary contribution to education. Thereby, the human-environmental system rhetoric plays an essential role in progressively substituting geographical knowledge by sustainable development understood as human-environmental systems.

Beyond conceptual frameworks and normative documents, the moderate constructivist paradigm (Siebert 2005) has shaped everyday classroom practices of teaching and learning geography. In Germany, along with an emerging culture of task formulation, educational media usage patterns belong to the most dynamic fields. While empirical studies repeatedly delivered evidence (Hemmer & Hemmer 2010) on an apparent mismatch between teachers' and students' preferences of educational media, classroom activities continue to rely on textbooks and worksheets designed by the teacher. While attempts to bring geographic information into the classrooms as well as digitising map skill instruction achieved limited success, the COVID-19 lockdown appears to be a unique opportunity that both challenges and forces teachers to leave their educational media comfort zone. Altered formats, channels, and means of communication lie at the heart of this transition.

Against the background of the above-described particularities of German school geographies, this paper aims to offer a first insight into changes the COVID-19 lockdown had on the teaching of geography in selected German federal states. In doing so, it looks into geography teachers' communication and educational media usage through a double lens: the institutional framework they operate in (e.g. school, curriculum, final examinations), and the acquisition of geographical knowledge that lies at the heart of their activity.

METHOD AND SAMPLE

Problem-centred interviews (Witzel 2000; Flick 2009) served to collect data. The structured and short questionnaire helped to collect factual data about the interviewees, such as age, gender, work experience, type of school, subjects and grades taught during the school year 2019/20. The exploratory study rested an interview schedule (guideline) that entailed the main questions along four topic areas: general challenges regarding teaching and learning in formal education during the COVID-19 lockdown, communication with the different stakeholders involved in formal

education (students, parents, colleagues, school heads), educational media (usage) in the teaching and learning of the subject geography, and COVID-19 as geographical content and its role in geographical knowledge acquisition. The four topic areas were pre-defined based on the extensive exchange the authors had with over fifteen in-service teachers involved in the teaching practicum. Given the sensitive nature of the information and fear connected to possible consequences when adopting a more critical stance towards school heads, parents, and the administration, the interviewers decided against using recording equipment of any kind and made as detailed notes as possible during the telephone interviews. In addition, in the aftermath of each interview, the interviewers generated a detailed postscript that contained detailed information, registered reluctance or unwillingness to give details on selected topics, and highlighted frequently emphasised aspects as crucial for the interviewees.

The conversational entry (Witzel 2000) at the beginning of each interview linked back to the original e-mail or phone contact that explained the research objectives and led to scheduling the interview. In consequence, teachers had enough time to prepare for the interview and were aware of the topic the interview questions would cover. Thereby, COVID-19 served as the overall framework of change that impacted the various facets of each teacher's professional life (i.e. the problem of the problem-centred interviews), spanning from the institutional framework consisting of the school and the educational administration through communication involving most stakeholders, such as students, parents, colleagues, and school heads, to educational media usage and learning in school geography. Data collection focused on two aspects of COVID-19 in school geography. In the first step, the interviewees were asked to reflect on COVID-19 as the content of their lessons. Subsequently, the interviewers asked the teachers to elaborate on the topic of COVID-19 against the background of geographical concepts.

The sample consisted of 15 in-service geography teachers from three German federal states (Bavaria, Berlin, and Lower Saxony).

Given the exploratory nature of the study, the sampling aimed for the highest diversity. Seven females and eight males with a teaching experience between eight weeks and 29 years participated in the study. The interviewees also fulfilled different duties, such as school heads, trainers, teacher trainers, bilingual educators, and worked at schools located both in economically prosperous and disadvantaged areas. The sampling process followed two strands. On the one hand, Humboldt-Universität zu Berlin's database of teachers served to establish contact with teachers. Similarly, Geography educators from the two other federal states facilitated access to interviewees. On the other hand, the authors mobilised their personal networks of teachers.

Content analysis served to explore the data recorded in the interview postscripts. The four pre-defined topic areas guided data analysis. The first step consisted of contrasting each interviewee's responses to the individual questions of the guideline that was based on the four topic areas. Subsequently, factual information served to revisit all interviews along the categories of age, teaching experience, gender, and school type. The last step concentrated on the various chances the interviewees saw along the four topic areas. Ad hoc questions across the interview helped to collect data on possible chances whenever interviews merely stressed negative effects.

RESULTS

The presentation of results follows the structure of the interview guideline and encompasses the significant challenges, communication, educational media, COVID-19 and geography, and chances.

Major challenges – The interviewees mentioned challenges of administrative and subject-specific nature. During the interviews, most teachers emphasised the administrative challenges. Concerning the administrative challenges, four main categories could be distilled from the statements and arguments: educational level, normative framework conditions, students' socioeconomic background, and communication.

Teachers encountered three main challenges when teaching lower and upper secondary groups. The overarching concern was finding the balance between the right amount of supervision and support. When addressing the (re-)negotiation of measures to support but also supervise students, the interviewees focused explicitly on inclusive concepts and avoiding to leave anyone behind rather than on individual progress. Finding the right amount of supervision, however, constituted a more significant concern. Assessment and examinations preoccupied most of the interviewed teachers. On the one hand, a fear of a grotesquely increased marking load across all grades became evident. Final examinations, on the other hand, raised the question of required support and overall supervision.

General normative framework conditions constituted the second category of administrative challenges. Curricular requirements and prescriptions strained teachers on two levels, namely state and school. State curricula prescribing the main framework of the school subject geography impacted the overall geographical education of certain generations. Given that in several federal states geography is a discontinuously taught subject, teaching and learning during the COVID-19 pandemic impacts, according to the teachers, several generations of future citizens. For example, the state of Berlin prescribes merely one weekly hour for geography in lower secondary education. The school curricula, according to teachers, further aggravate the situation by agglutinating the subject into a two-weekly-hours subject taught only every other semester. Selected students might, for instance, study geography in the first semester of the seventh and only in the second semester of the eighth grade, while others enjoy continuous geographical education in the second semester of the seventh and the subsequent first semester of the eighth grade. Another example is the federal state of Bavaria with a state curriculum that prescribes a discontinuous geography education (e.g. geography alternates with other subjects yearly).

In addition to the curricular framework, teachers also stressed the unclear communication of both ministries and school heads. Along with the quality and quantity of legal requirements, recommendations, and regulations,

teachers also required further regulations on curricular content. Mainly younger teachers felt the need for more robust guidance and support in selecting topics and units of higher priority.

The third category of administrative challenges was the students' socio-economic background. Teachers expressed concern regarding the availability of spaces, equipment, access to equipment, spaces for learning, and parental supervision. Several teachers explained that their students lived in large families that shared minimal living space. For example, secondary school students in Berlin often shared a small flat with up to five siblings. The crowded space during the lockdown, particularly during the early days with low temperatures and banned public space usage (e.g. parks), led to reduced physical space to study. Based on their observations, teachers mentioned that such students often used the school libraries as a quiet, spacious, and accessible place to do their homework. With closed school and public space merely accessible for exercise and individuals on the move, teachers saw limited possibilities for their students to achieve progress on their school work.

Another concern teachers mentioned was the availability of suitable hardware. The number of computers and tablets in many households was limited. Access to hardware worsened the bottleneck with parents in home office and several school children competing for simultaneous access to carry out duties that required their attention. While many students had smartphones, the small devices were unsuitable for many educational purposes and had a definite impact on teachers' educational media choice. Teachers from all three federal states encountered the challenge that some of their students' households (up to 15% in Bavaria according to the interviewees) had no access to the Internet. The interplay of restricted or unavailable Internet access together with less adequate hardware availability required the careful selection of educational media and their distribution partly through traditional channels.

Parental supervision was the third concern teachers mentioned when listing the administrative challenges of socio-economic nature. The interviewees reported a wide range of

parental supervision from clarifying phone calls regarding selected tasks to the inability to establish contact with students since school closure.

Finally, the fourth administrative challenge teachers mentioned was communication. The concerns coagulated around two main areas: direct contact with students and the aim of communication. Regarding the direct contact with students, most teachers encountered difficulties in dealing with minimal direct feedback from students. Concerns they saw link back to assessment and examination in general, and student progress in particular. As the lockdown was enforced merely a few weeks before the scheduled final examinations (*Abitur*), the interviewees expressed concerns regarding both the preparation for and the implementation of the final examination. Also, most interviewees worried about the adequate diagnose of their students' progression and its translation into marks.

Geographical skill acquisition within complicated communication frameworks, however, seemed of secondary importance to most teachers. During the interviews, teachers reflected on their role as geography teachers and the aims of communication and staying in touch during the pandemic. Some of the questions that preoccupied the interviewees were the role of schools in supporting students to overcome these difficult times by offering moral support and a sense of belonging to a community as well as minimising further social disparities and access to education for students that were already disadvantaged before the COVID-19 protection measures.

Subject-specific (in this case, geographical) challenges complemented those of administrative nature. While most teachers set the emphasis on the latter type of challenges, they also referred to two types of difficulties revolving around the teaching of geography during COVID-19.

Mostly young, but also more experienced teachers struggled with both technology and planning. On the one hand, digital skills and their application through multiple channels of communication put considerable pressure on the interviewees. Besides, most teachers feared restricted diagnostics and support (e.g. scaffolding), particularly in lower secondary

grades. Content elements of particular concern were map skills or globalisation, two areas that, based on their experience, required particularly intensive support and intensive exchange in the classroom. Also, school heads gave different indications on COVID-19 as content with some suggesting to proactively discuss this timely geographical content and others requiring its omission to avoid overstressing the omnipresent topic.

Summing up, the results reinforced the first observations gained prior to the interviews during the discussions with teachers supervising students during teaching practicum that communication and educational media would play an essential role in the teaching and learning of Geography during the COVID-19 pandemics. The following two subsections entail detailed information on both factors.

Communication – Following the exploration of general challenges, the interview proceeded to specific questions concerning the communication structures, processes, and channels. Teachers were asked to offer details on communication according to three groups of stakeholders: colleagues, school heads, and students.

Communication among colleagues remained surprisingly stable. The only in-substantial increase in communication was limited to technological solutions and digital communication means at the school level. Concerning geography, teachers stated to have intensified communication through their channels with teacher friends teaching geography at other schools instead of getting in touch more often with their colleagues. Another indicator of extremely reduced communication and collaboration were statements according to which teachers gained – for the first time – insight into what their colleagues taught by looking up the materials and activity on the digital classroom platform their schools used. Particularly younger and less experienced teachers desired more guidance and reassurance concerning the changes they were forced to make to their planning. Support from colleagues, however, was mostly unavailable.

School heads communicated, in the interviewees' view, rather scarcely and limited their messages to information on administration

and technological solutions. Most teachers expressed the need for more specific and frequent communication and regulations instead of delegating the responsibility to the individual teacher. The comparative analysis of the results, however, showed a somewhat distorted perception of the degree of regulation and their communication by school heads and ministries. During the analysis of the interview postscripts, five regulations and actions originating either from the school heads or from the ministries of education were identified. The mismatch between the communicated regulation and the perceived vacuum on the side of teachers requires a closer look at these five dimensions. First, some school heads advised teachers to use the textbooks more frequently given their availability, the comparability of the results, and their independence from the hardware infrastructure of the individual households.

Second, the Lower Saxonian Ministry of Education, as well as several school heads in Berlin and Bavaria, recommended tasks focused on the revision of previously acquired knowledge – a particular challenge for discontinuously taught subjects, such as geography.

Third, Bavarian school heads communicated the ministerial prescription according to which schools merely were allowed to deliver educational offers to the students. The regulation stressed that adverse effects on individuals deciding against such voluntary educational offers were to be avoided.

Fourth, in most cases, school heads required teachers to limit the amount of homework and tasks to prevent overburdening the students.

Finally, several teachers experienced explicit or implicit discrimination of the school subject geography. In the act of explicit discrimination, one school head prescribed teachers to focus on the essential subjects (i.e. mathematics, German, science) at the expense of all other subjects. Implicit forms of discrimination encompassed a variety of formats, spanning from offering indications and recommendations for other subjects except for geography to systematic discrimination against the subject already at the level of human resources (reluctance to

unwillingness to hire geography teachers). Along these lines, most teachers stressed the systematic discrimination against the subject originating from state officials and policy, resulting in a progressive marginalisation at all levels (e.g. curriculum, the spot in the timetable, electives, human resources).

The interviewees described a confusing and fragmented communication with students. Also, most teachers stressed that established communication formats or those in the process of establishment discriminated against economically and socially disadvantaged students. The communication also showed some particularities according to the educational level. While older students starting with tenth-grade (aged 15) displayed better digital and overall communication skills, keeping in touch with younger lower secondary students constituted a challenge. Mainly fifth- and sixth-graders (aged 10–12) were difficult to reach, often required the support of their parents, and remained idle since the beginning of the lockdown. In contrast, upper secondary students (grades 11–12, students aged 16–19) communicated intensively and extensively. As a result of these disparities, teachers described two types of interaction along the lower and upper secondary divide. In most cases, lower secondary students received their tasks and reported back their solution without further inquiries or failed to get back to their teachers. Upper secondary students, in contrast, engaged extensively in discussions with their teachers.

Apart from the content, the interviewees also offered information on the communication channels and the stakeholders involved in the process. The multitude of communication channels, spanning e-mails, individual or group WhatsApp chats, phone calls, different messenger services, digital school platforms, and traditional mail, overwhelmed the teachers. Despite the multitude of channels, all respondents aimed for the maximal inclusion of their students, they were even using the traditional mail to facilitate the access to copied educational media to disadvantaged students or those who faced hardware-induced limitations.

The number and type of stakeholders involved in the communication process also

showed a heterogeneous picture. Most teachers communicated strictly with their students, while class teachers dealt with parents and other stakeholders. Some parents of younger students, however, sought out direct contact through various channels.

Some interviewees also stressed the marginalisation of geography as a result of students' priorities. When asked to compare the quantity and quality of communication revolving around geography in comparison with the other subject they taught, most teachers indicated that students tended to get in touch more frequently with questions concerning the core subjects.

Next to communication, educational media were the second factor influencing the teaching and learning of geography during COVID-19. The following section outlines the types of educational media as well as changes in their usage.

Educational media – The questions addressing educational media followed COVID-19's chronology. The teachers were first asked to offer information on their educational media usage before the outbreak, followed by the amendments they made to adapt their geography teaching to the new framework. Finally, interviewees could list the difficulties and challenges they expected for the coming months.

The interviewed geography teachers used a variety of educational media before the COVID-19 restrictions, including the (digital) textbook, (digital) atlas, worksheet, map, and picture. The most commonly used hardware and software were the blackboard, smart board, Padlet, document camera, PowerPoint presentation, and, on rare occasions, Google Earth and WebGIS, along with iPads/Microsoft Surfaces for projections in classrooms.

Based on their information, teachers adapted both their educational media repertoire and its usage for homeschooling and considered the changes to be significant. Most teachers discarded videos and pictures they traditionally showed at the beginning of selected lessons. Also, the blackboard as a central surface of content organisation and structuring became unavailable for homeschooling. Overall, the dramaturgy of the

geography lesson suffered severe alterations. Four aspects seem, in this context, of central importance.

First, widely available and analog educational media gained in importance. Particularly textbooks became the central educational medium for most interviewees. Most teachers argued that textbooks as analogue educational media were available to all students and reduced competition for digital hardware and online time.

Second, teachers aimed to avoid the parallel usage of two educational media – a common feature of regular geography lessons – given that most students used the small screens of their smartphones as primary hardware. In their view, switching back and forth between worksheets, videos, maps, and pictures was an unnecessary burden under the given circumstances. Some teachers even prepared copied worksheets and materials and mailed them to those students who had limited to no access to hardware and/or the Internet.

Third, digital atlases and cartographic apps along with other online offers (e.g. simpleclub, online learning videos, digital worksheets, Padlet) experienced an increased usage parallel to the content of the textbook or copied materials.

Fourth, both field-trips and experiments were inaccessible teaching formats. Some teachers recommended tasks that could be solved while exploring the immediate surroundings of students' homes. For example, mapping exercises while walking or jogging were some of the ideas that should both replace field-trips and apply skills in physical space outside the flat.

Overall, teachers focused on the hardware and less frequently on the educational media and their content. Also, most teachers mentioned rather pragmatic solutions as a reaction and progressive adaptation to the new situation.

When reflecting on possible challenges of the following months, the interviewees named some concerns, but primarily placed their educational media usage into the broader context of (geographical) skill acquisition. Most teachers stated that recycled and altered educational media would shape

their Geography teaching with a few articulating concerns regarding the increased time resources required to develop digital educational media. Some teachers also mentioned the need for teachers' magazines traditionally offering worksheets and ideas on selected topics and regions to become more digital and react faster to teachers' needs. Overall, the interviewees expected their teaching to become more monotonous.

Within the broader context of (geographical) skill acquisition, the teachers mentioned concerns addressing social skills and critical evaluation of sources. The interviewees feared that homeschooling would considerably impact social skill development, regularly required, and development in the classroom while working in pairs and groups. Also, constructing arguments and reasoning were skills the teachers feared their students had little opportunity to exercise while studying at home. Critical evaluation of materials and media serving the overall aim of educating critical and informed citizens was another area of concern. Communication as a one-way street, where teachers mailed tasks and students delivered solutions, remained a common concern, even if some teachers, aware of the challenge, chose such formats fearing overburdening or unmanageable amounts of messages.

Finally, less experienced teachers reflected their future educational media usage within the framework of a distorted dramaturgy of lesson planning and delivery, mentioning, once again, the need to receive more support and reaffirmation in these challenging times.

The final thematic bloc of the interview focused on COVID-19 as content. The next subsection summarises the findings on teaching the pandemic in lower and upper secondary education.

COVID-19 and geography – This subsection explores the results on COVID-19 as geographical content. Also, it presents results concerning the way interviewees positioned COVID-19 within the framework of geographical concepts.

Around half of all interviewees already addressed COVID-19 before the lockdown. The remaining teachers also intended to include the topic as content, mainly along with the

current thematic units or those prescribed for the remaining months of the school year. Overall, teachers discussed COVID-19 within three main thematic areas. Most interviewees focused on the economic repercussions the virus had on supply chains, economic collaboration across Europe, economic processes of the globalised world, and tourism. Many teachers used COVID-19 as a means to explore critical cartography along with the representation, perception, and construction of geographical spaces. Those teaching lower secondary groups contextualised the pandemic within essential services, such as food supplies, electricity, and potable water. Teachers involved in bilingual geography set a stronger focus on COVID-19 by using sources in different languages and the case studies of various countries. Beyond geographical content, most teachers also addressed COVID-19 before the lockdown in general terms, offering information on the virus, its spreading, and communicating measures of prevention and protection.

When asked to elaborate on the topic of COVID-19 against the background of geographical concepts, the interviewees offered less detailed and more superficial information. Teachers looking back on shorter work experience mentioned sustainability, space, place, scale, and processes as key concepts with the potential to be developed while addressing the pandemic. More experienced teachers trained before the implementation of the educational standards offered general information or even mentioned to be less interested in the topic of geographical key concepts.

The closing question of the interview aimed to map whether the teachers anticipated any positive effects of the COVID-19 pandemic.

Chances – The interviewees listed both administrative and content-related positive effects of the pandemic. As with the challenges, most teachers focused on administrative aspects and offered little information on the content of geography education.

All interviewed teachers agreed that digitisation was the explicit and most positive impact of

the pandemic. Along with their students, also colleagues and digitally less skilled colleagues were forced to deal with alternative communication channels and educational media, such as Google Earth, GIS, and digital maps. Some teachers recognised an upside in the establishment of more project-based and self-organised work instead of strict disciplinary and timely units of subjects and forty-five-minute lessons. Other interviewees perceived a stronger orientation on the learning outcomes in terms of product-oriented learning – difficult to achieve, under normal circumstances, in a subject taught in one hour weekly. Provided the communication channels worked, and students remained involved and active, teachers also saw improved feedback both in qualitative and quantitative terms. Also, some teachers reported improved monitoring of individual progress by focusing on one student at a time.

Apart from the immediate and visible effects, the interviewed teachers also listed four neuralgic points that, once improved, could be counted as improvement in the aftermath of the COVID-19 pandemic. First, funding and additional resources for schools were required to achieve the rapid digital transition that was long overdue. Second, an intensive and meaningful exchange among colleagues could increase the quality of education. Third, improved and more systematic feedback channels would have a positive effect on self-determined but monitored individual work at home. Fourth, digitised education could contribute, when consolidated, to a more definite inclusion of marginalised individuals (e.g. slower learners, introverted individuals).

Concerning possible chances connected to COVID-19 as a topic, the answers remained generic and short. All teachers confirmed the necessity to address the topic. One teacher underlined the suitability of the topic for cross-disciplinary teaching.

DISCUSSION

The results of the exploratory study presented in this paper paint the geography teachers in selected German federal states as individualist educators concerned with equity who react to external challenges,

require guidance, are mainly preoccupied with administrative matters, and with distorted priorities in teaching constructivist and competence-based geography.

Being an educator in challenging times was at the heart of the concerns all interviewed teachers articulated. Reflections on the role of each teacher in demanding times, offering moral support and a sense of belonging to a community underline the fact that geography teachers are foremost educators. The subject plays a secondary role. In a geographical reading or in light of the subject's image (Gans *et al.* 2018), this might seem like an alarming finding. However, geography teachers primarily equip young individuals with geographical knowledge relevant to their lives. Motivating new generations to become geographers, thereby, is of secondary importance. Nonetheless, the interviewees were aware of the marginalisation trend the subject experiences both in the curriculum and in the individual schools. The COVID-19 pandemic served, along these lines, as yet another eye-opener and indicator of the alarming situation of German school geography.

Closely connected to their vocation was the teachers' concern to maintain equity and avoid leaving anyone behind. The interviewees had detailed knowledge of the socio-economic challenges their students faced and adapted their teaching accordingly. Two of the most striking pieces of evidence were the return to the textbook and the reduced diversity of educational media. Teachers actively chose the analog textbook as the main educational medium, given its full availability even in less digital households or in those with competing individuals for hardware access. Also, teachers reduced the diversity of educational media to prevent unnecessary burdens resulting from the fact that most of their students learned using their smartphones instead of a computer or tablet. Providing additional media via the smartphone to the content of the textbook allows both a personalised and up-to-date educational offer tailored to the specific needs of each group.

Except for one teacher, all interviewees continued in an analogue tradition and displayed a rather reactive behaviour. The arguments collected on challenges, communication, and

educational media stress that teachers react to change instead of inducing extensive innovation. Evidence is visible in the call for additional and suitable educational media (e.g. teachers' magazines, cf. Bagoly-Simó & Uhlenwinkel 2017) but mainly in the adaptation of daily business to the new framework. COVID-19, as a hot topic to explore geographical concepts, for example, remained widely unexplored.

The results uncovered both a loud call for regulation and guidance as well as a skewed perception of educational leaders. In doing so, most teachers demanded, indirectly, as little responsibility as possible. Concurrently, all teachers named many regulations and even specific data their school heads collected on the students' socio-economic background. Still, all teachers demanded more regulation. Particularly early career teachers sought reinforcement and support. These findings originate, in part, in the structure of the initial teacher training where the teacher training students and young in-service teachers gradually take over responsibility but enter a school culture that is highly individualistic and avoids, in most cases, collaboration. Moreover, the reluctance to assume more responsibility repeatedly became visible, for example, during the process of curricular opening in the federal state of Berlin, where teachers demanded more substantial guidance and actively resisted to take over responsibility (Kucharzyk & Bagoly-Simó 2020).

The results further showed that most interviewees overemphasised administrative concerns at the expense of those immediately tied to geography. While the interviewees explicitly required the teachers to focus on geography, concerns revolving around digitisation and communication prevailed. Furthermore, the interviewees also stressed the effects of the German individualist teacher culture in terms of a no-share policy of educational media and closed doors policy. The generational conflict around the externally imposed digitisation underlines structural problems that need to be addressed both in initial and continuous teacher training. Reducing the teaching load of each teacher (currently up to 28 weekly hours), focusing on collaborative formats already during the teaching practicum, a more social in-service training, and collegial structures based

on collaboration and communication are the first consequences for educational policy and teacher training.

Lastly, competence-based education within the framework of moderate constructivism still challenges most teachers. While outcome assessment and marking were significant concerns, teachers seem to encounter difficulties in defining school geography's key competence areas. Instead of focusing on geographical knowledge along with spatial orientation and map skills, the two genuinely geographical competence areas in Germany (DGfG 2012), teachers were primarily concerned about developing reasoning and social skills in times of homeschooling. Also, most teachers encountered difficulties to convincingly describe the role of COVID-19 as a topic of great everyday importance (cf. IGU CGE 2016) and connect it to geographical knowledge. While rightly focusing on problematic skill acquisition during homeschooling (e.g. social and reasoning skills), geographical skill acquisition fades to the background, and teachers fail to contextualise a topic of high everyday relevance within geography's key concepts.

The results presented in this paper prove that teachers refrain from supporting the dogmatic discourse stating the understanding of human-environmental relations to achieve a more sustainable future as school geography's primary objective (Haubrich *et al.* 2007; DGfG 2012; IGU CGE 2016). Discussing COVID-19 in terms of economic geography instead of human-environmental systems is one of the many indicators. Also, the interviewees indirectly rejected an exclusively systemic view in school geography. Map skills and critical cartography aimed at visualising the representation, perception, and construction of space (Wardenga 2002) reaches far beyond human-environment systems and embraces a more human geographical perspective on the world.

CONCLUDING THOUGHTS

This paper aimed to offer a first insight into changes the COVID-19 lockdown had on the teaching of geography in selected German

federal states. In doing so, it explored geography teachers' communication and educational media usage through a double lens: the institutional framework they operate in (e.g. school, curriculum, final examinations), and the acquisition of geographical knowledge that lies at the heart of their activity. In-depth interviews carried out with a small sample of German teachers offered insight into the way geography teachers perceived teaching in times of the pandemic. The results, on the one hand, suggest that geography teachers in selected German federal states are individualist educators concerned in equity who react to external challenges, require guidance, are mainly preoccupied with administrative matters, and with distorted priorities in teaching constructivist and competence-based geography. The results also stress the ongoing marginalisation of the subject both at policy (curriculum) and school level.

Overall, the findings crystallised around two main arguments. On the one hand, geography teachers proved to be great educators dedicated to their students' needs in times of homeschooling. Most concerns also revolved around communication, assessment, and generic skills that remained independent from geography. The findings, thus, indicate a list of issues in need to be addressed as part of the general educational sciences content during teacher training as well as part of continuous training and school reform. On the other hand, the results of this study highlight an alarming loss of both geographical competence and identity. The findings indicate that constructivist approaches translated into skills and standards are yet to reach the level of the subject, while geography as a series of content elements in service of generic competences (cf. Young & Muller 2010; Bagoly-Simó 2017) persists. Even more alarming is the failure to contextualise everyday events within key concepts and incorporate them into teaching to support meaningful geographical knowledge acquisition. Paradoxically, geography teachers are aware of both the importance of their subject and the progressive marginalisation it experiences.

To conclude, the results show the progressive de-disciplinisation of school geography (Bagoly-Simó 2017) and the dilution of its

competence areas in favor of generic skills only remotely linked to geography. Given the explorative nature of the study presented in this paper, the conclusions merely offered a first insight into three specific school geographies practiced in three different German federal states. Similar studies are currently exploring the research questions in other national contexts to achieve comparability and prepare larger-scale and comparative work revolving around the impact of substantial and immediate change on school geographies, their disciplinary identity, and geography teachers' classroom activities. Such work also requires feasible and applied alternatives to the powerful geographical knowledge debate that explore the degree of de-disciplinisation to give new meaning to being a geography teacher in times of constructivist and competence-based education.

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