

# Attractive geographical themes and topics from the perspective of students (2000–2021): A systematic review

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**ABSTRACT** Geographical themes and topics are some of the factors that influence the way geography is perceived by students. Geographical content can be key to geography's appeal as a discipline and to improving its image to students and society. The aim of this systematic review is to identify geographical themes and topics that are attractive to students as well as the research methods that determined them. The studies were searched for through the Web of Science and Scopus using keywords. After setting the inclusion criteria (years, language, age of students), 12 relevant studies were identified. The results indicated that the topics of physical geography prevailed; natural hazards were mentioned the most because they directly affect humans' lives. The students also enjoyed human geography topics. The themes and topics that were unpopular required abstract thinking or were not directly related to students' everyday lives. This review emphasizes the students' voices in geography education and provides insights regarding curriculum innovations in geography education.

**KEY WORDS** students – geographical themes – geographical topics – attractiveness – image of geography

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## 1. Introduction

This study responds to the fact that the reputation of geography as a discipline and as a teaching subject is declining globally (Bent, Bakx, den Brok 2013; Kidman 2018). In Czechia, geography's hourly allocations are declining at all levels of education (Ministry of Education, MŠMT 2021), teacher initiatives are being created to save geography in schools (<https://zachranzemepis.cz/>) and petitions are being written to advocate the usefulness and benefits of subject knowledge for the general development of students ([www.kompas.education](http://www.kompas.education)). Along with these problems, school geography in Czechia is struggling with low teacher competence and qualification (Knecht, Spurná 2021) and aging teaching staff (Maršíková, Jelen 2019). The Czech School Inspectorate reports that geography tuition in schools in the Czechia is often descriptive, based on direct teaching – often in the form of dictating facts, definitions and lectures (ČŠI 2018). This is perhaps why only 58% of Czech students enjoy learning geography (ČŠI 2015) and only around half of Czech students regard geography as a school subject (ČŠI 2019).

In my previous study I have identified four factors that influence the image of geography as a school subject. The first factor is the personality of the teacher – how he/she approaches geography and how he/she is able to enthuse students. The second factor is the teaching method. In particular, students prefer active learning methods in which they can participate; they reject persistent fact-based learning, where they only have to memorize large amounts of information. The third factor is cultural difference, as each student prefers a different focus in geography depending on where they live and what culture they are in. The fourth factor is geographical content, which also contributes to how geography is viewed (Korvasová 2021). All of the aforementioned factors are important and contribute to the presentation and acceptance of geography as a school discipline. Since no complex research has been carried out yet, we cannot say which factor is the most important; therefore, we should approach them equally.

Therefore, the main aim of this study is to focus on one of the factors of geography's image – the geographical content of geography – and specifically the topics discussed in the classroom from the students' perspective. I knew from my previous findings that not many studies focus on the content that they prefer; most were rather focused on their attitudes or motivation in general. Therefore, I decided to expand on this topic, and I conducted a systematic review study answering the following research questions: Which geography topics are attractive from the perspective of students? What research methods do researchers use to ascertain the attractiveness of geographical topics from the perspective of students? My starting point is the premise that knowledge about topics that are attractive from the students' point of view and related research practices can not only help increase the popularity of geography among students but also show how

the reputation and perceived usefulness of geography in the eyes of the professionals and general public can be improved. The findings, in their applied form, can be used to inform innovation in the geography curriculum, as the student voice has not been taken into account thus far.

In the following sections, I first outline the theoretical background of the research. I then present the methodological procedure used, the results of the study and their interpretation. Based on the research findings, I propose recommendations for education practice and curriculum development.

## 2. Theoretical premises

The choice of the topic and its relevance were influenced by feminist geography perspectives (Hancock, Bettinger, Manseri 2020). Feminist theories are characterised primarily by the criticism of the inequality of relations in the contemporary world, as they purposefully draw attention to the diversity of individuals and the inequalities that are created between them. Harding (ed., 2004) point out that if we want to know the objective world and the relationships within it, it is necessary to explore other knowledges – i.e., alternatives to the hitherto single, neutral and rational view. The starting point of this concept is the social constructivist approach, which assumes that knowledge is socially constructed and that different people (or different groups of people) may therefore construct different knowledges (Berger, Luckman 1991). In this study, I perceive students as a group that could also be described as a minority, whose views are not heard or are often overlooked. Their views are inferior in power to the views of experts, curriculum makers and teachers. This is evident, for example, in the absence of students' voices in curriculum or textbook design (Lee, Catling 2017). Students' voices are a perspective to which we must listen in order to improve and implement changes in education that are effective and responsive to the educational needs of the students themselves (Arnot, Reay 2006; Bragg 2001). Students' voices provide an active opportunity for students to express their opinions and make decisions regarding the planning, implementation and evaluation of their learning experiences (Rogers 2005). This gives students the ability to influence learning to include policies, programs, contexts and principles.

It is therefore advisable to ask students how they perceive geographic content, what content they prefer, which topics they are not interested in and where we should look for the cause. Attractiveness of the geographical content comes to prominence. Based on various definitions, I believe that attractiveness means to cause interest or pleasure and to pull someone or something towards by the qualities it has. In this case I consider attractiveness of the geography subject as the important factor that decides whether students like the subject or not, based on

the geographical content it offers. According to Mortensen (2012) I believe that attractiveness in my research is simply and alternative approach to managing the relationship to geography based on the creation of voluntary motivation and commitment towards the school subject. Therefore, once we know what the students are interested in, we can try to hear their voice.

But first, it is necessary to clarify what is meant by geographical concepts, geographical themes and geographical topics. A geographical concept is a generalisation for a group of specific items that have common features. It is a term used to group objects, events, people and processes that share common characteristics. According to Lambert and Morgan (2010), geographic concepts can be divided into abstract concepts – i.e., those that are superordinate (e.g., natural disasters) – or concrete concepts that are already directly related to specific topics (e.g., volcanic activity). For the sake of clarity and readability of the text, I have chosen the term ‘theme’ to refer to a superordinate or abstract concept and ‘topic’ to refer to a more concrete term. I do not focus in this study on the so-called key concepts (Taylor 2008), which I understand as overarching abstract ‘big ideas’ that organize specific concepts, themes and topics.

### **3. Methodology**

For this research, I sought studies that revealed the themes and topics students enjoyed and were interested in. Thus, I adopted a systematic approach to reviewing the appeal of geographic content, meaning I conducted a content analysis (Petticrew, Roberts 2008; Snyder 2019; Neuendorf 2016).

#### *3.1. Selection criteria*

During the summer of 2021, I searched the Scopus and Web of Science databases. The studies were retrieved from these two peer-reviewed databases; thus, the consulted texts can be expected to meet certain quality standards. Primarily, I set three rules that I wanted to follow within the selection. I only included articles written in English. The respondents in the research were students between 11 and 19 years old; more precisely, the students had already attended the second grade of primary school or high school. Lastly, I set the time frame of the studies for 2000–2021. I wanted research that would represent the current situation towards geography, as well as describe the situation based on contemporary curriculums. The curriculums around the world are going through changes all the time, but the year 2000 is, from the Czech perspective, the threshold between the previous socialist times and the new European direction.

### 3.2. Database search and elimination process

For this reason, it was necessary to choose certain key words: “pupil” and “student,” then “interest” and “attitude” and, of course, “geography.” I considered adding geography topics (“theme” or “topic”) directly to the search, but the search itself did not reveal any other relevant studies. Therefore, I chose the following as the final search wording on Scopus: KEY ((geography) AND (interest OR attitude) AND (student OR pupil)). I then chose the same keywords in the Web of Science database. I was offered 106 articles on Scopus and 15 on Web of Science.

On the former I narrowed the list down even further by listing only studies from sociology, environmental studies, Earth studies and multicultural studies. The final number was 91 articles. The latter database yielded only 15 articles after using identical keywords. Subsequently, I found that 12 articles were duplicates with those from Scopus. I excluded 75 of the final 94 articles after reading the title and abstract. Of the remaining 19 studies, 14 were excluded following a critical reading and finding that they did not meet the predefined criteria. This left me with 5 articles, which is very few. It was necessary to proceed to snowball sampling, as I already knew of a certain selection of articles that I used in my previous research on students’ image of geography (Korvasová 2021). I knew that seven other studies dealt at least partly with the attractiveness of the topics; however, the search code did not discover them. One of the reasons why they were not discovered in the search was that they appeared, for example, in a journal for teachers where the keywords were not listed in the articles. The second reason was that the attractiveness of the topics was always addressed as one of the subtopics of the article, so the link to them did not appear in the article’s title or keywords. Therefore, I also included these studies as they were relevant. Even so, it is evident that this is a very narrow topic that has not yet been investigated in detail; it thus constitutes something of a research gap, both from the students’ point of view and especially the teachers’. The entire study selection process is shown in Figure 1.

## 4. Results

The data on the attractiveness of geographic themes and topics from the perspective of the students, which I obtained from the individual studies, were categorized according to their affiliation with physical, environmental or human geography and then structured into more general themes and more specific topics. Here, I also present the research methods used to determine the attractiveness of geography topics from the perspective of students. The research findings are summarised in Table 1.

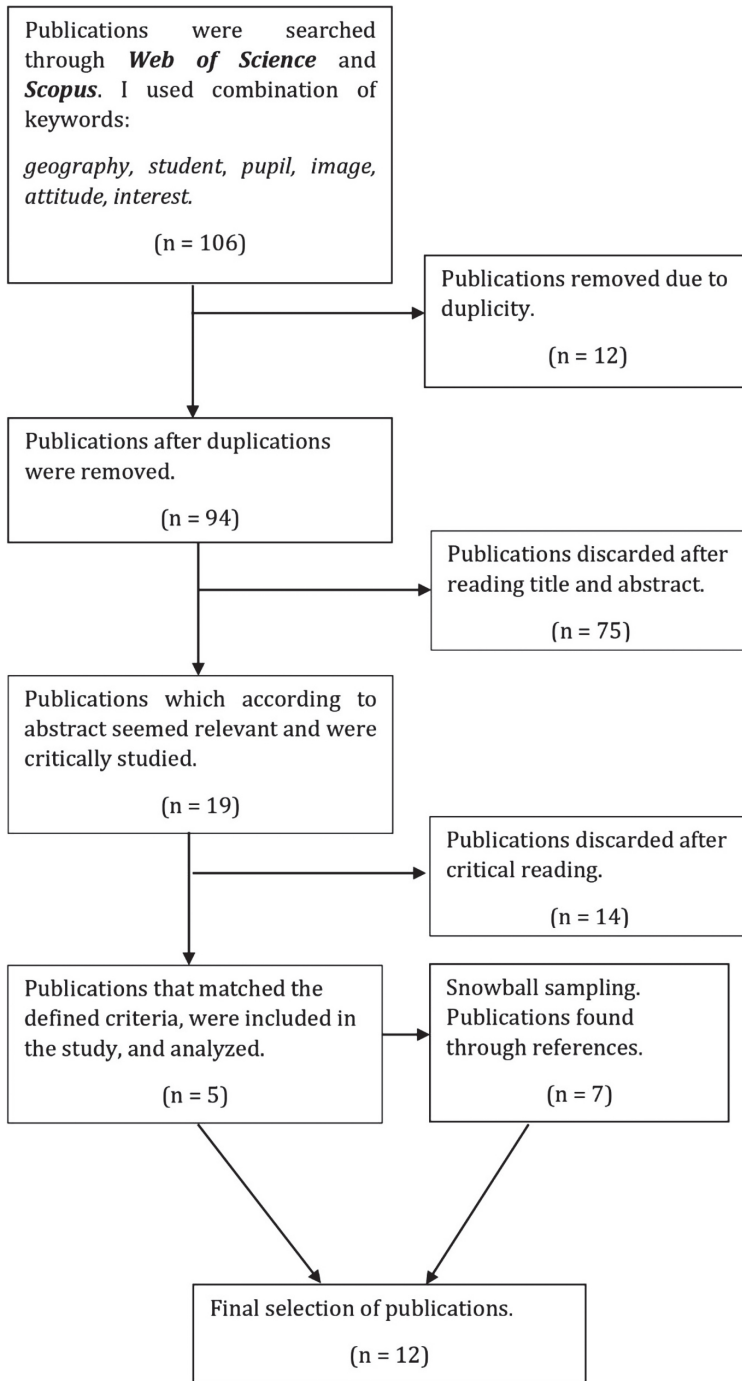


Fig. 1 – PRISMA flow diagram depicting the selection of studies for the review. Own illustration.

**Table 1** – Selected publications and their main characteristics

Author	Country	Respondents	Year of the research	Aim of the research	Method	Analysis	Geographical themes and topics
1. Norman (2004)	United Kingdom	400 students 14 years old	N/A	Gauge students' perception of the subject in schools with the intention of informing future planning of initial teacher courses.	Questionnaire survey with open questions	Quantification of key words	PG: natural hazards
2. Harrison, Norman (2004)	United Kingdom	450 students 11 years old	N/A	Find out what students like and dislike about geography.	Questionnaire survey with open questions	Quantification of answers	PG: geomorphology – mountains, landscape; natural hazards – earthquake, climatology – weather, climate EG: environmental issues in general
3. Tomal (2010)	Turkey	405 students 14–17 years old	N/A	Determine the place of geography among other courses as well as find out the reasons why students have positive or negative attitudes towards it.	Questionnaire survey	Variance analysis Descriptive statistics	PG: natural hazards – earthquake; climatology – climate change Unpopular: climate processes such as pressure, wetness, parallels and meridians
4. Bar-Gal, Sofer (2010)	Israel	500/280 students 14–16 years old	N/A	Comparison between the official Israeli Ministry of Education's curriculum goals of studying geography and the perceptions of Israeli junior high school students.	Structured interviews Questionnaire survey	Descriptive statistics Quantification of keywords	EG: environmental issues in general HG: global economy, political conflicts, borders determination
5. Al-Nofli (2010)	Oman	48 students 11–16 years old	2 <sup>nd</sup> semester of academic year 2009/2010	Explore students' perceptions about certain aspects of school geography.	Semi-structured interviews	Open coding	PG: natural hazards – tsunamis, hurricanes, cyclones, earthquake EG: erosion, acid rain, deforestation Unpopular: rocks recognition, global economy

Author	Country	Respondents	Year of the research	Aim of the research	Method	Analysis	Geographical themes and topics
6. Kitchen (2013)	United Kingdom	60 students 11–12 years old	09/2010– 05/2011	Find out what are the students' perceptions of school geography as a result of teaching.	Questionnaire survey Poster Semi-structured interviews	Interview analysis Quantification of answers/ keywords	PG: natural hazards – earthquake, volcanoes, climatology – weather and climate EG: environmental issues
7. Bent, Bakx, den Brok (2014)	Netherlands	53 students 11–12 years old	N/A	Answer what are the pupils' perceptions of the current and preferred states of geography education within primary school.	Group semi-structured interviews	Open coding Interview analysis	PG: natural hazards – tsunamis, hurricanes, earthquake
8. Senyurt (2014)	Turkey	520 students 11 years	2012	Identify the understanding that primary-age students have of the term "geography" and which aspects of geography students most strongly associate with the subject through their recall of geographical topics they have studied.	Questionnaire survey	Categorical coding Quantification of key words	PG: geomorphology – mountains, plains, peninsula, climatology – climate, global warming HG: historical context – places related to history, war zones, global economy, agriculture
9. Burnett, Crowe (2016)	United Kingdom	142 students 11–16 years old	Spring term 2016	Identify how students perceive the teaching of geography at school and see the continuity and progression of the curriculum between Key Stage 3 and Key Stage 4.	Poster Questionnaire survey	Phenomenographic analysis Quantification of key words	PG: geomorphology – mountains, landscape, natural hazards – earthquake, climatology – weather, climate EG: environmental issues in general HG: general – related to population and economy



Author	Country	Respondents	Year of the research	Aim of the research	Method	Analysis	Geographical themes and topics
10. Hemmer, Hemmer (2017)	Germany	3,400 students 10–17 years old	Summer 2015	Find out the what the interests in geographical content are for teachers and students and compare them.	Questionnaire survey	Factor analysis	PG: natural hazards – general, especially earthquake EG: poverty and hunger, deforestation HG: global crisis, zones of war and conflict, population Unpopular: global economy, European cooperation, transportation, services or urbanization
11. Kidman (2018)	Australia	199 students 15–16 years old	N/A	Address the misalignment between students' topics of interest in geography and their teachers'.	Questionnaire survey	Factor analysis Statistic methods SPSS	PG: natural hazards, climatology – climate change EG: environmental issues – GMO related topics HG: global security and peace Unpopular topics: local problems – social analysis of housing, waste sorting system, imperialism, and its consequences
12. Opoku, Serbeh, Amoah (2020)	Ghana	116 students 14–16 years old	Academic year 2017/2018	Identify the factors accounting for students' predilection for or aversion to school geography.	Semi-structured interviews	Interview analysis Quantification of key words	PG: climatology – climate, weather HG: local economy, agriculture, prosperity Unpopular: creation of deserts, coastal areas

Note: PH – Physical Geography, EG – Environmental Geography, HG – Human Geography

#### 4.1. *Attractiveness of geographical topics from students' point of view*

First, I would like to point out the indispensable role of topography and locational knowledge. Learning about distant places and landscapes, but also about places from the local region, remains a primary requirement for many students. In this case we cannot totally confirm that these places define the most appealing geography-related content from the students' perspective, but they are still somewhat important and relevant to them. This was confirmed by 41% of UK students (Norman 2004). For 21.8% of Israeli students, it is important to know about important places, cities of the world and their locations (Bar-Gal, Sofer 2010). Turkish students tended to be more focused on knowledge of places of interest in Turkey and Turkish cities; however, they also mentioned the world or space, marginally (Tomal 2010). Senyurt's (2014) study yielded similar findings, with 49.6% of students referring to knowledge about the local region and 24.4% of students referring directly to Turkey. Students even gave direct examples of other countries (32.7%), capitals and continents (9.6%). Around 15% of students mentioned their interest in knowing foreign countries and their capitals, and even fewer were interested in knowing about their own country (Norman 2004). The second part of Hemmer and Hemmer's (2017) survey asked directly about particular regions and areas. On a 5-point scale, areas that are far from Germany and/or closely related to where Germans frequently travel were rated as the most interesting regions for German students. The regions picked as most interesting were North America (3.99), Australia (3.79), Antarctica and the Arctic (3.58), Western Europe (3.57) and Southern Europe (3.55). Berlin (3.61) was also among these popular regions, probably because it is the capital and also very important in terms of history. Similarly, in terms of regional geography, the students were interested in learning about recreational areas (3.51; Hemmer, Hemmer 2017).

##### 4.1.1. *Physical geography*

The geographic themes that resonated the most with students were mostly related to physical geography. In all the studies included in the review, physical geography topics could be considered as the main theme. Topics from environmental geography or human geography were mentioned less often by students. When looking at studies from developing countries, the physical geography theme resonated the most (Al-Nofli 2010, Senyurt 2014). Geography is an interesting subject through which students learn more about the world – i.e., what it looks like and how it is formed – and they are specifically interested in relief and shapes. By learning about the environment around them, students can focus on local problems and their potential solutions. Tomal (2010) states that Turkish students were interested in which areas are prone to earthquake risks and what the consequences may

be since it is not advisable to build buildings in certain locations due to earthquake risk. Physical geography topics provide students with practical information for their daily lives – for example, about the climate – that enables them to adjust their lives accordingly (Opoku, Serbeh, Amoah 2020). Physical geography topics were also prevalent in Burnett and Crowe’s (2016) research, although the British curriculum at Key Stage 3 and Key Stage 4 is more focused on socio-economic themes. Students in Key Stage 3 mentioned physical geography topics in 38% of cases and 44% of cases in Key Stage 4, with students mentioning the topics of relief or natural hazards.

#### 4.1.2. *Geomorphology*

Senyurt (2014) found that the largest number of students (62.3%) preferred geomorphological topics or learning about landforms. Geomorphological themes are superior to the specific topics mentioned by the students. This is because they could express themselves in a simpler way that was appropriate to their age and did not require using technical terms. Most often, they mentioned topics such as mountains (45%) and plains (31%), or they directly referred to the topic of relief (30%). Furthermore, I assigned a fairly wide range of topics to geomorphological themes, from very general ones, such as island or peninsula, to more specific topics, such as dam, valley, rock, desert, delta, bay, glacier, coast, marsh or basin, which are naturally related to or directly shaped by relief (Senyurt 2014). The key topics of relief, landscape and mountains have also been identified in studies by Harrison and Norman (2004) and Burnett and Crowe (2016).

#### 4.1.3. *Natural hazards and disasters*

Natural hazards and natural disasters also seem to be an attractive theme for students and were especially mentioned by younger students. The findings were confirmed, for example, by a Dutch study where students mainly mentioned tsunamis and hurricanes (Bent, Bakx, den Brok 2014) and a study from England where one-seventh of the polled students found natural disasters to be an attractive theme (Norman 2004). Omani students were also interested in the topic of hurricanes, cyclones or tsunamis, as they linked them to specific events in the world (Haiti) or to their own region (Al-Nofli 2010). Students in Australia also showed interest in natural hazards, scoring 3.02 on a 5-point Likert scale (Kidman 2018). Students in Germany have the highest interest in natural disasters, with this topic scoring 4.23 on a 5-point Likert scale; it was even the most interesting of all topics for them (Hemmer, Hemmer 2017). Probably the most frequently mentioned natural disaster is the earthquake and the phenomena associated with it. Almost a quarter of students in England identified Earth movements,

earthquakes and volcanic activity as being interesting (Harrison, Norman 2004; Burnett, Crowe 2016), and these topics are of interest to as many as 81% of students in the Netherlands (Bent, Bakx, den Brok 2014). German students rated the topic of the earth's formation and internal motions as the third most interesting, with a value of 3.89 on a 5-point Likert scale (Hemmer, Hemmer 2017). In Turkey, students' interest in earthquakes is apparent mainly due to its connection with everyday life. Students were interested in knowing where the fault lines are and where the risk of quakes is higher so that they can choose where it is better to build a house (Tomal 2010). In Oman, students were interested in the volcanic activity in Iceland, which can have global impacts and has crippled air travel worldwide (Al-Nofli 2010).

#### 4.1.4. *Climatology*

The third physical geography theme is climate and the phenomena associated with it, such as weather or climate change. In the Dutch study, 76% of students mentioned climate (Bent, Bakx, den Brok, 2014), while in 30% of students in Key Stage 3 and 23% of students in Key Stage 4 mentioned weather the English study (Burnett, Crowe 2016). The main topics of weather and climate (mentioned 20 times) were also revealed in a study by Harrison and Norman (2004). In the Turkish study by Senyurt (2014), 22.5% of students pointed to climate. Tomal (2010) mainly showed the specific issues and topics that students were concerned about and what they wanted to learn in geography. In relation to climate change, they were mainly interested in the reasons for its occurrence and the possible future consequences. Students related everything to their everyday life in Turkey and whether their living and natural conditions could be affected in any way, as well as whether they should start preparing for such consequences, like in the Netherlands, where they are building protective dams. In contrast, in the study by Senyurt (2014), only 1% of the students mentioned climate change and global warming. Students from Ghana gave very different reasons for their interest in weather and climate. For them, it is highly important to be informed about weather and climate conditions as it helps them plan activities throughout the year, especially in relation to agriculture (Opoku, Serbeh, Amoah 2020). Climate change was also mentioned by Australian students, as it can also affect them greatly in the future (Kidman 2018).

#### 4.1.5. *Environmental geography*

In addition to climate change, which was the topic mentioned most often by the students, other current environmental issues were also mentioned to a marginal degree. In Turkey, for example, the environmental theme has not yet resonated,

with only 5.6% of the students surveyed mentioning it, despite its introduction into the new social studies curriculum and programme objectives (Senyurt 2014). The findings from Oman indicate the opposite: students were aware that they would like to learn about issues that are happening on Earth (and in their country) and that could affect their lives. They explicitly mentioned topics such as soil erosion, extensive grazing, acid rain and deforestation (Al-Nofli 2010). Interest in environmental issues was also evident among Arab students in Israel, where 27.1% of students identified them as being important (Bar-Gal, Sofer 2010). Two topics received high ratings in Germany – the fight against poverty and hunger, which ranked sixth overall (3.63), followed closely by the issue of deforestation (3.59; Hemmer, Hemmer 2017). In contrast, interest in the environmental theme was not significant in the UK. In the first phase of the research, only about 6% of students mentioned the environmental theme, while the theme was present for 18% of students in the second phase (Burnett, Crowe 2016). Meanwhile, only 13% of the students mentioned the environmental theme in Harrison and Norman's (2004) study. A very different situation can be observed in Australia, where students were interested in the effects of climate change, but they were far more interested in the risks associated with genetically modified organisms (GMOs), which is a major issue in Australia. This topic can be very narrow, but the Australian curriculum (based on which students identified topics of interest) addresses it consistently. Students were mainly interested in the production of GMO crops, their spread into the natural environment and their impact on human health, as well as the harm of GMOs to pollinators. In addition to these specific topics, it was important for students to be able to map dissemination and develop their digital mapping skills through the study of such topics (Kidman 2018).

#### 4.1.6. Human geography

The socio-economic topics that the students found attractive were very different, specific and very much coloured by their particular culture. Israeli students rated the world economy (31.8%), political conflicts (30.4%) and border demarcation (28.2%) as the most important topics to cover in geography. For Jewish students, the results were even higher – 36.4% for political conflicts and 35.7% for boundary determination (Bar-Gal, Sofer 2010). Australian students also showed interest in world peace and security, naming this topic as one of the important in their curriculum (Kidman 2018). A similar interest could be observed among German students, choosing world crises and war zones as the fifth most interesting topic, with a score of 3.68 (Hemmer, Hemmer 2017). The aforementioned students were still the only ones to highlight more population-related topics. Specifically, they were interested in people from foreign countries (3.59) and the lives of children and young people in the world (3.58; Hemmer, Hemmer 2017).

National sentiment and pride were evident in Turkish students, for whom geography was very much linked to history. One possible explanation is the concept of a curriculum where the two subjects are taught together. Senyurt (2014) showed that for 42% of students, the perception of geography is especially grounded in history; for example, they are interested in historical places and monuments in general (16.7%), historical places and events related to Atatürk (9%), places related to the Ottoman Empire (4.4%) and wars (4%). Some students (14.6%) were also interested in economic topics, but this interest was more from the context of the global interconnectedness of the world (Senyurt 2014). Conversely, a local perspective on economic issues seemed necessary to students in Ghana, as only by understanding what their country has to offer can they purposefully help Ghana's socio-economic development (Opoku, Serbeh, Amoah 2020). Thus, within geography, they can learn about natural resources and what they can be used for. At the same time, they can learn how to be a good farmer and contribute to this dominant economic activity. Particularly in relation to agricultural issues, it is clear why students are primarily interested in physical geography topics – if they understand how the landscape around them functions, they can benefit from and contribute to efficient farming (Opoku, Serbeh, Amoah 2020). While agriculture was indeed a prominent theme for students in Ghana, it was not so for students in Turkey, with only 6.7% mentioning it (Senyurt 2014). Human geography was also referred to by students in England, but they did not specifically mention any individual topics or themes. In Key Stage 3, 29% mentioned human geography and 31% in Key Stage 4 mentioned it (Burnett, Crowe 2016).

#### *4.1.7. Unattractive themes and topics for students*

Only five studies surveyed the specific themes and topics that students find unpopular and unattractive. The other studies reported only on topics that students find interesting. Opoku, Serbeh and Amoah (2020) pointed out that 31 out of the 116 students surveyed disliked geography, mainly because it is a complex science for which they need to know a great scope of information and phenomena. However, this reason was also mentioned by the students who enjoy geography and are interested in it for this very reason. The students further shared the view that they are not amused by topics that are too abstract and detached from reality (Opoku, Serbeh, Amoah 2020; Tomal 2010), as they find it challenging to visualize select physical geography processes that take place over long time horizons. Students specifically mentioned the formation of deserts and coastal landforms (Opoku, Serbeh, Amoah 2020). Turkish students rated topics related to more complex climatic processes, such as those related to moisture or pressure, as being problematic (Tomal 2010). In addition, they pointed out that they had difficulty understanding and finding interesting topics that were really abstract,

such as parallels or meridians (Tomal 2010). In Oman, the students clearly opposed learning about rocks, as it required learning many facts and details; moreover, it was not interesting for them. Nor were they interested in global economics, which they felt was discussed in too much detail (Al-Nofli 2010). Hemmer and Hemmer's (2017) findings confirmed this, with the global economics topic also being among the least interesting. Australian students rated social analysis of their homes and the waste segregation system as being the least interesting topics in the curriculum, topics that focused on a local scale. Students also expressed reluctance to engage with imperialism and its effects (Kidman 2018). The five least popular topics among students in Germany were European cooperation (2.69), social and economic inequalities (2.75), the welfare system (2.79), transport (2.84), services and urbanisation (both 2.85; Hemmer, Hemmer 2017). Specific locations that do not interest German students include Southeastern Europe (2.93), Central Europe (2.99) and German regions in general (2.99; Hemmer, Hemmer 2017).

#### *4.2. Research methods used*

Quantitative (4), qualitative (5) and mixed methods designs (3) were used in the studies examined. Six studies used various forms of questionnaire surveys. The same questionnaire survey design was used in the UK (Harrison, Norman 2004; Norman 2004), where students aged 11 were asked two open-ended questions. They were asked to list the things they like and dislike about geography. From these studies, 400 and 450 questionnaires were respectively collected, and content analyses were conducted to look for key words and themes that students liked best about geography. These key words were coded and matched to their superior themes. The results were compiled into four tables: most and least favourite topics/teaching methods. In Senyurt's (2014) study, two open-ended questions were asked to 520 Turkish students. She also focused on students aged 11, asking them to write down topics they associate with geography. A more extensive questionnaire survey was conducted by Tomal (2010), who asked 405 students aged 14–17 years about issues related to geography, but then asked open-ended questions about geographical topics that interest the students. A different approach was taken by Kidman (2018), who surveyed 199 students (aged 15–16) in a questionnaire survey in Australia. The questionnaire contained 35 items based on topics covered in curriculum documents (Australian Curriculum: Humanities and Social Sciences F-6/7 HASS, Australian Curriculum: Geography 7–10, and Senior Secondary Curriculum: HASS Geography). Students used a 5-point Likert scale to answer whether or not they were interested in the topics. The German study was also based on a questionnaire survey containing topics covered in the curriculum. The research sample included 3,400 students from Bavaria and North

Rhine-Westphalia. The questionnaire contained 57 items on thematic components of geography and 25 items focusing on regional geography. Of course, the questionnaires also included questions on the age and gender of the respondents, the type of school and, for teachers, questions on their university studies (Hemmer, Hemmer 2017).

The second group of studies used semi-structured interviews as the main research tool. In the Netherlands, 53 students were interviewed and divided into groups of 5 to 6 students. The students were aged 11–12 years. Geographical topics were touched upon rather marginally throughout the research, which primarily investigated the main factors influencing the popularity of geography in schools (Bent, Bakx, den Brok 2014). Group interviews were also conducted with students in Oman by Al-Nofli (2010), who determined the views of 48 students in two age categories, 11–12 years and 15–16 years. Individual interviews were also conducted by Opoku, Serbeh and Amoah (2020) in Ghana, with 116 students aged 14–16 years participating in the research. The interviews were initiated with an open-ended question: Is geography one of your favourite school subjects and why? Subsequently, the interviewers asked the respondents about the reasons.

The third group consists of three studies that combined methods, with the research being carried out in two to three phases. Bar-Gal and Sofer (2010) first phase conducted short interviews with 500 students aged 14–16. In this first phase, students were asked to answer three open-ended questions that explored the aims of geography through the students' perspectives. In the second phase, 280 students participated in answering a 17-item questionnaire that was designed based on the findings from the first phase. The items were divided into three dimensions that addressed students' background knowledge, basic geographic principles, and values (Bar-Gal, Sofer 2010). A two-phase study was also conducted by Burnett and Crowe (2016), which included 142 students aged 11–16. Students first created posters in pairs (on the topic of 'What is geography?'); then, students were asked to individually write a definition of geography. The resulting findings and key concepts were identified through content analysis and coding of individual statements. The final study conducted by Kitchen (2013) in the UK had three phases: 60 students aged 11–12 were first asked three open-ended questions to identify key terms and concepts with which students associate geography. Then, six students were asked to create posters to better explain their statements. In the third phase of the research, semi-structured group interviews were conducted with six students (in two rounds) to validate and better explain the findings from the first phases.



## 5. Discussion

Geography is perceived by students as a very complex science that offers them holistic knowledge, skills and understanding of the world and the processes that affect it (Tomal 2010; Opoku, Serbeh, Amoah 2020). However, what some students rate as being beneficial, others rate negatively (Opoku, Serbeh, Amoah 2020). Students find geography to be interesting and enjoyable because it is an integrated science that also examines problems and phenomena from other disciplines; it is also transferable to everyday life and can help us understand everyday problems (Al-Nofli 2010). One of the factors that significantly affects interest in geographical topics is the age of the polled students. Al-Nofli (2010) observed that there is a noticeable difference between younger and older students. Younger students are more interested in the world around them, especially with regard to physical geography topics (e.g., landforms). Older students already have a more complex view of geography and are therefore predominantly interested in current issues, other countries and cultures (i.e., human geography, with topics such as the global economy or war). However, it is important to note that the interest in a geographical topic itself can be strongly influenced by the teacher's personality, teaching methods (Tomal 2010) and the cultural environment in which the student is located (Korvasová 2021). Research that compares the views of multiple groups of respondents (e.g., students and teachers) provides very valuable findings (Kocová, Marada 2022). Indeed, it turns out that not only different groups of students may have different perceptions from each other, but teachers may also perceive selected geographical topics or teaching strategies differently, as demonstrated by the studies of Kidman (2018) and Hemmer and Hemmer (2017), which also focused on teachers' perceptions of geographical topics. Different student and teacher perspectives may also naturally cause barriers in teaching (Hemmer, Hemmer 2017; Svobodová et al. 2020).

The findings indicate that physical geography topics in particular are attractive to students. At the same time, physical geography content is gradually decreasing in the curriculum, which has long been criticised (Keylock 2006). Hawley (2013) highlights the associated concerns as well as teachers' ambivalent views about the nature, purpose and strategies of teaching physical geography in schools. Mitchell (2019) illustrates that teachers may tend to avoid physical geography topics because, for example, they believe that students are not interested in physical geography topics and that they would thus have to deal with the students' misbehaviour. However, the findings of this review show that physical geography themes especially provide opportunities for 'connecting specialised knowledge children engage with in schools and classrooms to young people's lives beyond the school gate' (Hammond 2021, p. 67).

In terms of the research methods used to investigate the attractiveness of geographical topics, qualitative inquiries are predominant, where students can

actually express their opinions through open-ended questions or different types of interviews. This inductive approach, while giving a lot of freedom to the students' voices, has its limits. We have to take into account that students may not be aware of all the aspects that geography encompasses. Therefore, students will only say the first thing that springs to mind (e.g., Norman 2004; Opoku, Serbeh, Amoah 2020). Thus, we can speak of a certain bias in qualitative research. Quantitative research, in the form of a questionnaire survey, has its own justification, where individual questionnaire items (themes and topics) are identified based on curriculum themes, and students comment on the specific learning they have experienced (Hemmer, Hemmer 2017; Kidman 2018). However, within this deductive approach, students do not have the space to express their own voice, as they are already limited by the geographical content on offer. However, this research offers a comparison of the subjective evaluation of the different themes and topics already included in the curriculum using a Likert scale. Hence, it seems best to use a combination of qualitative and quantitative research, or a mixed methods design, where students would respond in a questionnaire survey (both open and closed items) and then participate in additional semi-structured interviews to elaborate and confirm their answers (Burnett, Crowe 2019; Kitchen 2013).

Naturally, the presented research also has its limitations, which are related to the limited number of analysed studies, the uneven demographic representation of the polled students and the temporal dispersion of the individual studies. Therefore, it is necessary to take methodological considerations into account. The studies analysed often had different aims and the topics of interest to pupils were often just a partial result in the study as a whole. The appeal of geographical topics to pupils was investigated using different methods and procedures. For example, Hemmer and Hemmer (2017) took a curriculum-based approach in their research; in contrast, Harrison and Norman (2004) took a qualitative approach, so that students could only come up with a topic that stuck in their minds during their geography lessons. The research also suggests that the topics' appeal to students can be culturally determined. Some research is older and may no longer reflect current developments. However, it seems that the topics that students find attractive are relatively stable over time, with no marked fluctuations in the results, despite curriculum reforms and changes across generations of students. I believe that general topics in physical geography are especially attractive to students and transferrable between countries and cultures. In the case of human geography topics, it is important to consider whether students' interest in the topic is related, for example, to the political situation or to the specific geographical features or issues of a particular country.

## 6. Implications for practice

It is important to realise the practical potential of these results. In general, students rate more general themes as being attractive. This is an argument in favour of a conceptually oriented approach (Taylor 2008), using themes and topics that are attractive to students to look at the whole world at different scales. The current need is for students to learn contemporary yet attractive themes that help them understand the world around them. This requires dynamic and forward-looking subject knowledge that is not fixed or entirely arbitrary (Mitchell, Lambert 2015; Maude 2020). This is another argument for abandoning the factual and traditional regional geography that is practiced in the Czechia, as well as in some other countries, and instead taking the path of thematic geography covered by key concepts (Dessen Jankell, Sandahl, Örbring 2021; Fögele, Mehren 2015). An example of successful work with key concepts in geography education is global learning, which also belongs to the Czech geography curriculum (MŠMT 2021). The aim of global learning is to improve knowledge and understanding of global contexts, to realise responsibility as a global citizen and to develop knowledge and skills to assess information from different sources or to look critically at global issues of different scales (Huckle 2015). Another example of an appealing concept suitable for the study of geography in schools is sustainability (Öhman, Sund 2021). The argument for including this topic in school lessons is also based on the fact that the themes identified as attractive in this review coincide with those revealed by the Czech School Inspectorate's analysis (ČŠI 2016). Among the global development themes and sustainability, students are mainly interested in the theme of human rights and the theme of global problems, with topics including environment, health, poverty and war. Here, we can also rely on the recommendations of Huckle (2015), who shows that the aim of such an approach is not for teachers to present individual facts, but rather for students to participate actively in the process, forming their own opinions on things and trying to reflect on their own place in the world.

## 7. Conclusion

A review of 12 surveys revealed that current topics directly linked to students' everyday geographies are most attractive to them. Physical geography themes – specifically natural hazards and topics from geomorphology and climatology – are most attractive to students. In terms of human geography, students' responses were more varied across studies. In particular, topics from political geography appeared to be attractive to students – political conflicts, war zones and global crisis. Students also rated select topics from environmental geography

as attractive – climate change and its consequences, deforestation and threats of GMOs on landscape and society. If geography teaching were to focus comprehensively on these topics, which often reflect current global problems and touch on everyday life, the subjectively perceived usefulness and popularity of geography in students' eyes could increase. At the same time, the review revealed geographical topics that are not attractive to students for various reasons. These are topics that are abstract, difficult for students to understand (e.g., air pressure or humidity) or do not bring new information to students' perspectives (e.g., monitoring social inequalities and poverty in their region).

The findings may be used as a source of information for curriculum development or revision, but they cannot be taken simplistically as an uncritical recommendation for curriculum development based on student voices. Geographical themes and topics perceived as appealing by students match the themes and topics students have encountered in geography classes. Thus, students may not be familiar with geographical themes and topics that are not conveyed to them in the classroom (Butt 2019, Stannard 2003). Future research should probably be preceded by introducing geography to students in its entirety – that is, at the level of traditional topics, new topics, and also introducing topics that reflect future challenges of geography as a discipline.

Even topics that are unattractive for students can be relevant to geography as a discipline and undoubtedly must have a place in the curriculum. For the less attractive topics, it is necessary to consider (a) how relevant these topics are to geography as a discipline, (b) what reasons explain their lower attractiveness to students and (c) what the possibilities are for making these topics more attractive in geography education. These questions are also a call for further research, ideally based on a meaningful combination of qualitative and quantitative research.

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