Contemporary Research in Education and English Language Teaching
ISSN: 2641-0230
Vol. 6, No. 1, pp. 20-32.
2024
Publisher: Learning Gate
DOI: 10.55214/26410230.v6i1.1030

Implementing different teaching methods in geography during the remote learning period in 2020

Janett Perv[1*], Marelle Grünthal-Drell[2]
[1]Tallinn Pelgulinna State Upper Secondary School, Tallinn, Estonia; janett.perv@perg.ee (J.P.).
[2]Tallinn Health Care College, Estonia; marelle.grunthal-drell@ttk.ee (M.G-D.).

Abstract: Due to the COVID-19 pandemic the teachers were required to adjust their previous teaching methods, test both their pedagogical skills and their digital competence, as well as the digital competence of the students. The purpose of the research was to map out teaching methods by geography teachers in Estonia, the efficiency levels of those methods, while also receiving feedback about the teaching process as it applied to remote learning. Mixed methods research was conducted amongst 76 geography teachers, data collection method was a questionnaire. The results revealed: if the most efficient methods of learning were forms of discussion which called for active communication between the students themselves, as well as between students and teachers, then the least efficient method was teacher-centered lecture. Forms of discussion were used by teachers most often in synchronized video lessons, but they requested suitable short educational videos and a uniform repository of teaching materials. Half of teachers didn`t use map-related work, minority used work with maps in the e-testing environments or into worksheets. More than half of teachers adjusted the assessment system without making any compromises in terms of learning outcomes. Half of the teachers were so far satisfied with the teaching process and with their contact with the students, half of the teachers believed that their students failed to achieve the planned learning outcomes.

Keywords: *Distance learning, Geography, Geography teacher, Learning, Learning outcome, Remote learning, Remote teaching, Teaching methods.*

1. Introduction

Remote learning is defined as the process of teaching, during the course of which the student and the teacher are physically located in different places and education is being provided simultaneously under the instruction of the teacher or, at different times, using the modern means of information and communications technology (Hebebci, Bertiz, & Alan, 2020; Laanpere & Puksand, 2021; Moore & Anderson, 2007; Simonson & Berg, 2016).

Pursuant to Schultz and DeMers (2020) the form of learning being used during the COVID-19 pandemic is also referred to as emergency remote learning, or emergency remote teaching, as it differs from everyday online learning thanks to the preparations it requires.

Teachers had to adjust the teaching methods they had previously used, and the state of emergency put their pedagogical skills to the test, as well as the digital competence both of teachers and students. The term 'synchronous learning' refers to the act of students and teacher communicating with one another in real time, either in the classroom or online (eg. via video lessons or in a chat room) (Termbases, 2012). The term 'asynchronous learning' refers to classes which are undertaken at the pace of the student. Pursuant to Oyeleke, Olugbenga, Oluwayemi, and Sunday (2015) materials which have been published online allow students to read them at their own pace and to ask questions in a virtual

History: Received: 16 April 2024; Revised: 30 May 2024; Accepted: 13 June 2024; Published: 5 July 2024
* Correspondence: janett.perv@perg.ee

environment or directly of the teacher. There is none of the usual pressure which accompanies real-time learning.

The teaching of natural sciences - including geography - has an important role in student development as these are interdisciplinary subjects which develop the required levels of natural science literacy, as well as various general competencies. Learning geography involves learning to know the environment, climate, natural resources, people, and the cultural, political, and spatial contexts. For the achievement of efficient learning, tasks of different levels must be used in teaching, something which is supported by the Bloom (1956) pursuant to which students should be developed at different 'levels' of the available learning methods. Those levels - knowing, understanding, implementing, analysis, synthesis, assessment - are increasingly complicated (Krull, 2018). In the last few decades there has been a shift in the classroom, with lecture-based classes having turned into classes in which the students are involved in the learning process by using various methods of active learning. According to Mathews and Flynn (2018) students remember 75% of information they have been taught by means of the active and experience-based learning method, and only 5% of information they have been taught through lecture-based classes. The connections are even stronger if real-life events are integrated into active learning.

The switch to remote learning also changed how geography was taught. In this case making use of maps and atlases in the classrooms alongside active learning methods had formerly been amongst the most important instruments. When it came to remote learning, all teachers had to find a way in which they could efficiently give their lessons via internet platforms and to help their students achieve the required learning outcomes.

The purpose of this research was to map out those teaching methods which are being used by geography teachers in remote learning, and to investigate the need for educational materials to ensure the further efficient organization of remote learning. Pursuant to the purpose of the thesis, three main research questions were set out:

1) Which teaching methods and learning environments were used by geography teachers to provide remote learning lessons?
2) In the opinion of the teachers, which teaching methods were efficient while remote learning was required?
3) Which educational materials are missed most by geography teachers?

2. Literature Review

Geography is an integrating and visual discipline which is located at the intersection between human society and the physical environment (Cosgrove, 2008; Daniels, 2011; Holt-Jensen, 2018, as cited in Ryan and Aasetre (2021)). The purpose behind learning geography is to enable students to understand the environment, the impact upon humans which is generated by that environment, and the impact upon that environment which is wrought by human activity (Parkinson, 2020). In the era of global challenges, such as ethnic and religious conflict, the increasing proportion of the human population which lives in a state of poverty, increasing competition due to limited natural resources, and the deterioration of the environment, it is important for all members of society to be prepared to make right decisions. Education in geography helps to prepare people to be able to fulfil those tasks (Edelson, Shavelson, & Wertheim, 2013; Lambert & Morgan, 2010).

Physical geography, which is based mainly on the natural sciences, and human geography, which is based on social sciences and the humanities, together provide a methodical, conceptually rich and multifaceted view of human societies. These two views show how societies are organized and how they have communicated in the past with the natural environment, how they are communicating with it now, and how they will be communicating with it in the future. Therefore, the act of researching geography integrates and develops our understanding of society, the economy, and the environment from the perspective of the three traditional pillars of sustainable development (Ryan & Aasetre, 2021; Skarstein & Wolff, 2020).

Contemporary Research in Education and English Language Teaching
ISSN: 2641-0230
Vol. 6, No. 1, pp. 20-32, 2024
DOI: 10.55214/26410230.v6i1.1030

The most important learning tools which are used in geography lessons are maps and atlases (Parkinson, 2020). For millennia paper maps have been the main method for displaying and learning geographical information. Education in geography calls for the use of maps to help students understand spatial relationships, which itself develops the spatial thinking of those students. Traditional paper maps have indisputably been changed in the digital era, but it remains to be seen which role they will play in the future. Even though different areas of digital technology are important, they may not always be the most suitable tool for use in the classroom (Collins, 2018).

Studies which have been carried out in the United States (Pedersen, Farrell, & McPhee, 2005) and in Australia (Verdi, Crooks, & White, 2002) have not identified any significant differences between the learning outcomes of those students who used paper or digital maps.

Virtual globes provide many new and interesting opportunities when it comes to learning geography, such as those which are supplied by Google Earth, Skyline Globe, and Nasa's World Wind in which satellite images, height readings, and 3D models make it possible to create a lifelike image of Earth (Liiber, 2010). Google Earth allows visitors to fly quickly to different places around the world to examine the relief or view streets, and it is available for everyone (Parkinson, 2020).

Geography teaching is fully adjusted to the use of different online tools, and in their use to learn or to teach, as geographers often use problem-based learning and the constructive approach (Altuna & Lareki, 2015; Lynch et al., 2008; Raath & Golightly, 2017). On the other hand, the process of having students focus on the tools which make it possible to use a geography-related information system has been somewhat problematic, as learning and implementing the tools takes time, and teachers often also lack sufficient digital skills to be able to do so efficiently (Bednarz & Bednarz, 2004).

In addition to the constructive approach, various forms of cooperation are also often used in geography lessons (such as working in pairs, or in groups, or debating). Visual aids are integrated into the process of teaching geography, such as in terms of trips, images, maps, simulations, geographical information systems, global positioning systems (GPS), and satellite images (Garrett, 2011; Jarvis, Dickie, & Brown, 2013) as cited in Ryan and Aasetre (2021)).

Using games for teaching can be an interesting and worthwhile practice. Electronic games, more in-depth games (such as Minecraft and SimCity), or simulation games may be useful in the teaching process (Wouters, Van Nimwegen, Van Oostendorp, & Van Der Spek, 2013; Ye, Gao, Yu, & He, 2021). Using games as a method of teaching has led to a transition from the traditional teacher-centered learning environment to a student-centered environment in which students are more active and involved (Watson, Mong, & Harris, 2011).

The use of information and communications technology in classes has enabled students to work with actual issues, gain quick and easy access to relevant information, share ideas with fellow students, and construct new areas of knowledge and meaning for themselves within a relevant and interesting context. Geographical visualization is facilitated by various simulations and animations which help students more accurately to understand complicated dynamic processes. Map applications and geographical information systems also help students to monitor patterns and processes and prepare virtual study trips (Lynch et al., 2008).

An online learning expansion project was initiated in 2017-2018 in cooperation with the Ministry of Education and Research (Tammets & Laanpere, 2018) with a constantly expanded digital repository of educational materials being created as a result of the development of online learning. The E-koolikott online platform (https://e-koolikott.ee/en) also includes educational materials which cover most of those topics which are being taught in geography.

2.1. Learning and Teaching in the Case of Remote Learning

Teachers needed additional daily planning time to be able to redesign their teaching process and make any changes which may be required to be able to conduct a high-quality teaching process (Gallagher & Cottingham, 2020). According to Bryson and Andres (2020) each online lesson took at least one hour of preparation.

Contemporary Research in Education and English Language Teaching
ISSN: 2641-0230
Vol. 6, No. 1, pp. 20-32, 2024
DOI: 10.55214/26410230.v6i1.1030

The learning environment within which remote learning is conducted should be student-friendly, with the content easily delivered in an attractive form (such as by using drawings, images, or videos), and should also be easy to understand (Bryson & Andres, 2020; Koçoglu & Tekdal, 2020; Oyeleke et al., 2015). It was Huang et al. (2020) who recommended using more open teaching materials or open educational resources which are freely available and do not require creating accounts or logging in.

Remote learning is not efficient if students must listen to lectures being given by teachers which last several hours a day (Gallagher & Cottingham, 2020). Reflective learning, critical thinking, and active learning are highlighted as those components which are primarily required for in-depth learning (Dummer, 2008, as cited in Ryan and Aasetre (2021)). Weeden (2007) adds that students enjoy learning if they can actively participate in learning activities such as watching videos, taking part in study trips, drawing, using maps, project work, discussions, making posters, and verbal presentations. These learning methods help students to achieve better learning outcomes and to develop their capacity to think (Huang et al., 2020; Weeden, 2007). Actual teaching occurs when teachers and students communicate with one another (Gallagher & Cottingham, 2020; Oyeleke et al., 2015).

Younger students can only efficiently participate in synchronized learning for a limited period before they get tired, and their attention loses focus (Gallagher & Cottingham, 2020). Therefore, video lessons are more efficient and easier to prepare if they are sufficiently short: approximately 5-10 minutes in length and containing captivating content (Daniel, 2020).

The main idea would be to support the student in their learning process, rather than to stick rigidly to deadlines (Barry & Kanematsu, 2020; Gallagher & Cottingham, 2020). Remote learning comes with additional requirements for students and their families: in addition to the equipment and the internet, students also require motivation, digital skills, focus, and the capability of being able to navigate different environments and tasks. Many students suffer from social isolation, and it could be presumed that they also must undertake additional tasks at home (such as having to care for other children) (European Training Foundation, 2020).

The understanding of teachers when it comes to allowing flexibility may also mean that the desired learning outcomes are reduced, and the assessment process becomes less stringent. This, however, means that students will not acquire the skills and knowledge which they require to be able to succeed in subsequent educational levels (Kimmel, Carpinelli, Spak, & Rockland, 2020). In addition to testing, teachers could also use other forms of assessment: discussions, short-term and long-term projects, miniature research projects, reports, or creative work (Crosslin et al., 2020).

Various studies Kuhfeld et al. (2020); Mælan, Gustavsen, Stranger-Johannessen, and Nordahl (2021) and Savery (2005) indicate an increase in the difference between the more and less academically successful students during remote learning. According to Kuhfeld et al. (2020) students achieved between 60%-87% of the required learning outcomes for the new academic year on the basis of at least half of the online lessons they had received. Those students who had lower self-regulation skills and academic results were not as efficient as the academically more successful ones, either in a normal situation or in remote learning

3. Methodology

The mixed method was used in the research, with a qualitative and quantitative research method being used alongside it to achieve wide-ranging results (Lagerspetz, 2017). Applying quantitative and qualitative data in one research area provides stronger conclusions than does using either one of these approaches separately (Creswell, 2014). A questionnaire was used as the data collection method. Numerical values which could be gained by using the quantitative method were complemented, expanded, and explained by means of the verbal outcomes which were collected through the qualitative method (Õunapuu, 2014).

3.1. Sample

A targeted sample was used in this research, with participants selected on the basis of pre-defined criteria (Õunapuu, 2014) as: working as geography teachers in Estonian general educational schools and having an experience of teaching by remote learning in the spring and autumn-winter of 2020 due to the COVID-19 pandemic. The final sample consisted of 76 geography teachers (around 200 in Estonia). To ensure anonymity, teachers were differentiated by using pseudonyms R1, R2, etc (R - respondent).

3.2. Data Collection Method

The questionnaire is one of the most used methods of studying society. The method's advantages include the possibility of being able to obtain answers from a high number of respondents, as well as the time-saving factor both for the researcher and the respondent. On the other hand, a low percentage of respondents (between 30%-40%) must be taken into consideration (Hirsjärvi, Remes, & Sajavaara, 2005; Lagerspetz, 2017).

The questionnaire created in the Microsoft 365 Forms electronic online environment; data secured in the server of the educational institution. Instructions and advice were observed in the drawing up of the questionnaire to make the questions easy to understand and easy to complete, as well as keeping them relevant, and to be able to include closed, semi open-ended, and open-ended questions (Bourque & Fielder, 2003; Hirsjärvi et al., 2005; Lagerspetz, 2017; Oppenheim, 1992). The questionnaire included 21 questions, of which the last was a voluntary feedback question which the teachers were allowed to skip.

The phrasing of the questions was made more understandable based on feedback from the pilot survey with three geography teachers.

The questionnaires were emailed and distributed to geography teachers in Estonian general education schools between 1.- 19. March 2021 via the geography teachers Facebook group or the mailing lists for the Estonian Science Teachers Union and the Estonian Geography Teachers Association. Email addresses were found on school websites where those were listed on the Eesti.ee website, with a total of 222 emails being sent out. Fully 76 geography teachers had responded to the questionnaire by 20 March. It is not possible to calculate a percentage when it comes to the overall number of returned questionnaires as it is not known how many of the respondents came through social media or though the mailing lists for the Estonian Science Teachers Union and the Estonian Geography Teachers Association.

3.3. Data Analysis

Descriptive statistics were used as the data analysis method. As the first steps in the process, diagrams and tables were drawn up for closed questions which did not require coding during the quantitative analysis. As the overall volume of this research was relatively small, the geography teacher survey results were analyzed using Microsoft Excel spreadsheet software.

For the second stage, regular content analysis was used to analyze the data, which makes it possible to describe the phenomenon being examined (Lagerspetz, 2017). The information was embedded into a system and was then categorized by means of using an inductive approach, with substantive codes being used which were formed of comprehensive concepts which had similar meanings. Substantive codes of the same substance were accumulated into categories which made it possible to produce generalized results (Lagerspetz, 2017; Õunapuu, 2014).

4. Results

The most frequently used teaching methods included online environments (for individual work), illustrative aids (involving drawings, presentations, and simulations), forms of discussions, and tasks which involved using textbooks (Figure 1).

Contemporary Research in Education and English Language Teaching
ISSN: 2641-0230
Vol. 6, No. 1, pp. 20-32, 2024
DOI: 10.55214/26410230.v6i1.1030

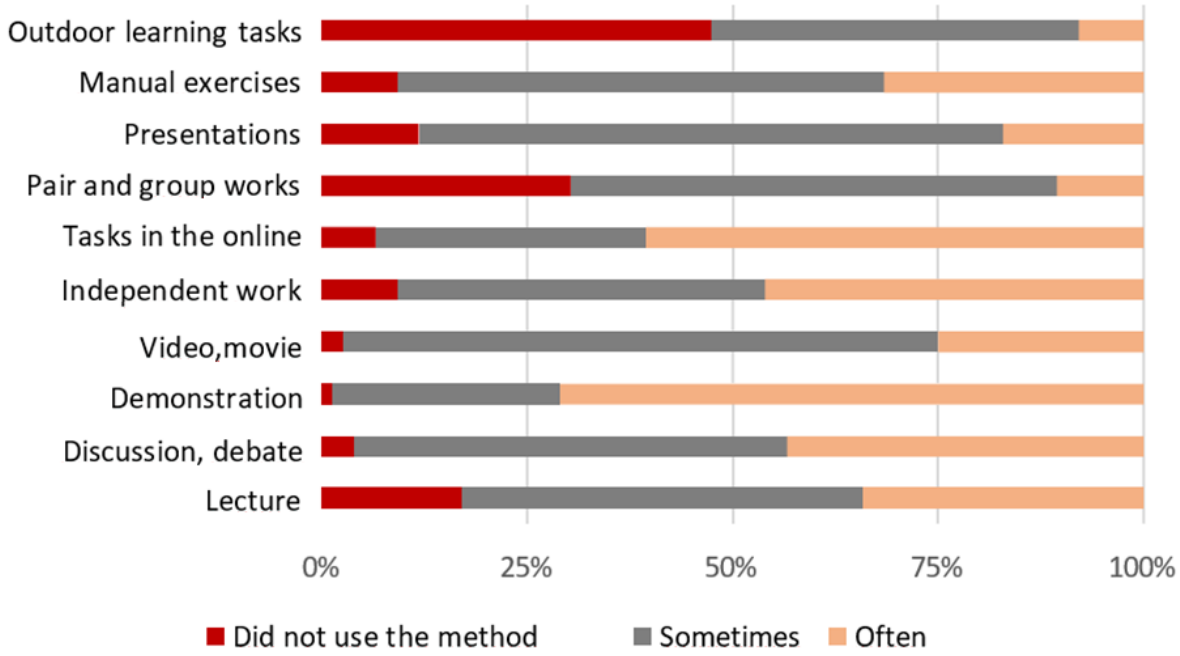

Figure 1.
Teaching methods used by geography teachers in remote learning.

In total, 34% of respondents (N=26) 'often' used the lecture, while 49% (N=37) used it 'sometimes' and 17% (N=13) did not use it at all. It was found that 45-minute teacher-centered lessons were given rarely, with the lesson mainly consisting of explanations by the teacher, followed by discussions and independent work.

Almost all teachers who gave remote learning lessons used discussion as one of the teaching methods (N=73), with only three teachers commenting that they did not use this method. Videos and films also proved popular teaching methods amongst teachers during the remote learning period. Of the respondents, 25% of teachers (N=19) used them 'often' in their lessons, while 72% of teachers (N=55) did this 'sometimes'. Only 3% (N=2) of teachers did not show any videos or films in their lessons.

Independent tasks with the textbook were used 'sometimes' by 45% of teachers (N=34) and often by 46% (N=46) of teachers, while 9% (N=7) of teachers did not use this type of task at all. Teachers found that textbooks and workbooks were very useful teaching aids, and working with them was a good variance when working in front of a computer screen.

In total, 61% of teachers 'often' gave tasks to their students in the online environment (N=46) and 33% (N=25) of teachers did this 'sometimes'. Five teachers said that they never used tasks in the online environment.

In total, 17% of teachers (N=13) 'often' used presentations by the students, and 71% (N=54) of teachers used them 'sometimes'. Just a few teachers, only 11% (N=9), never had their students create presentations. Teachers also used methods in remote learning which involved taking notes and drawing, with 91% of teachers (N=69) applying learning the subject via manual work (writing and drawing).

Only 11% of teachers (N=8) 'often' used different forms of cooperation, while 59% (N=45) of teachers did this 'sometimes', and 30% of teachers (N=23) said that they never used that learning method in remote learning.

In total, 34 teachers (45%) 'sometimes' used outdoor learning tasks, while 6 teachers (8%) 'often' applied the method. Almost half (N=36) of teachers did not use outdoor learning in the remote learning period.

Concerning the efficiency of the teaching methods, teachers' opinions were different.

Contemporary Research in Education and English Language Teaching
ISSN: 2641-0230
Vol. 6, No. 1, pp. 20-32, 2024
DOI: 10.55214/26410230.v6i1.1030

R24: *'/.../different methods are suitable. Students get acquainted with the subject (with the help of the textbook and slides, videos, etc.), take down notes about it, and solve interactive tasks (via Opiq or e-koolikott, for example).'*

R42: 'Combining all options to make the learning as diverse and exciting as possible.'

R66: 'Integrated methods works best: a lecture which includes a discussion and displaying images and video material, with students writing down notes at the same time (being actively involved in the topic).'

The majority (*N=62*) of teachers found that any tasks which required communication (such as working in pairs, discussions, or brainstorming) produced efficient results during remote learning and helped to achieve the set learning outcomes.

R46: *'/.../discussions and forms of cooperation also worked well as, in my opinion, one of the greatest issues for the students is the lack of social skills. Therefore, I like those options which allow me to guide them to communicate and cooperate, usually in the form of simple discussions or a problem which requires a solution.'*

However, 14 teachers had an opposing opinion which stated that using **discussions** with students did not provide the desired results when remote learning. Reasons mentioned included technical difficulties (e.g. an echo on the connection, interruptions in the internet connection), the problem of class participants speaking simultaneously, the lack of participation and the general passiveness of the students, the slow switching of roles, slow response times, difficulties in involving all students together, and the discussion turning into a monologue by the teacher, for example.

R65: '/.../ it is very easy to remain invisible in the online environment...'

R7: '/.../ The camera and microphone are very rarely switched on and the students often do not respond. This will turn a discussion into a monologue...'

15 teachers mentioned creating presentations as an efficient learning method, as it allows students talk more and perform, and the process of searching for information helped them to better internalize that information. On the contrary, 12 teachers highlighted the fact that cooperating in an online lesson was rather complicated. In the opinion of 17 teachers, independent tasks (whether worksheets or online environments) which followed explanations being given by the teacher were well-suited to synchronous remote learning lessons. The possibility for the students to be able to work at their own pace and the lack of time pressure were both areas which were highlighted as advantages. 14 teachers mentioned the use of the Opiq.ee online environment as a successful teaching method, as it makes it possible to see quite quickly whether each student had learned the topic sufficiently, as well as making it easy to provide them with feedback on their work. A few teachers had experience with outdoor learning tasks, while only 7 teachers highlighted the usefulness of this method for the student.

Teacher 25: '*This is the biggest part of individual learning and connecting learned material with real life.'*

Teacher 46: *'/.../ This option was especially well-suited, as students must sit in front of their computers almost all day long and, therefore, doing something like being sent outside to map out the surroundings around their home, which involved some physical effort, gave them a reason to be active and not simply to sit there /.../'.*

19 teachers believed the lecture method the most inefficient teaching method. The main reasons: the quick diffusing of student attention; with them not thinking about the topic or working alongside it; failing to stick to the lesson times, and internet connection issues on both sides. It was also mentioned that the teacher had no idea about each student's actual levels of activity, with it being easy for the student to remain invisible, with their camera and microphone both switched off.

Also found that the four largest sources of maps being used in teaching geography were the Google map applications (N=51), the Opiq online environment (N=48), the interactive map games in Purposegames (N=47), and the map portal of the Estonian Land Board (N=45) (Figure 2). To a lesser extent, maps were searched for online (N=27) and were added to the teaching material or were used in the (N=21) Learningapps environment.

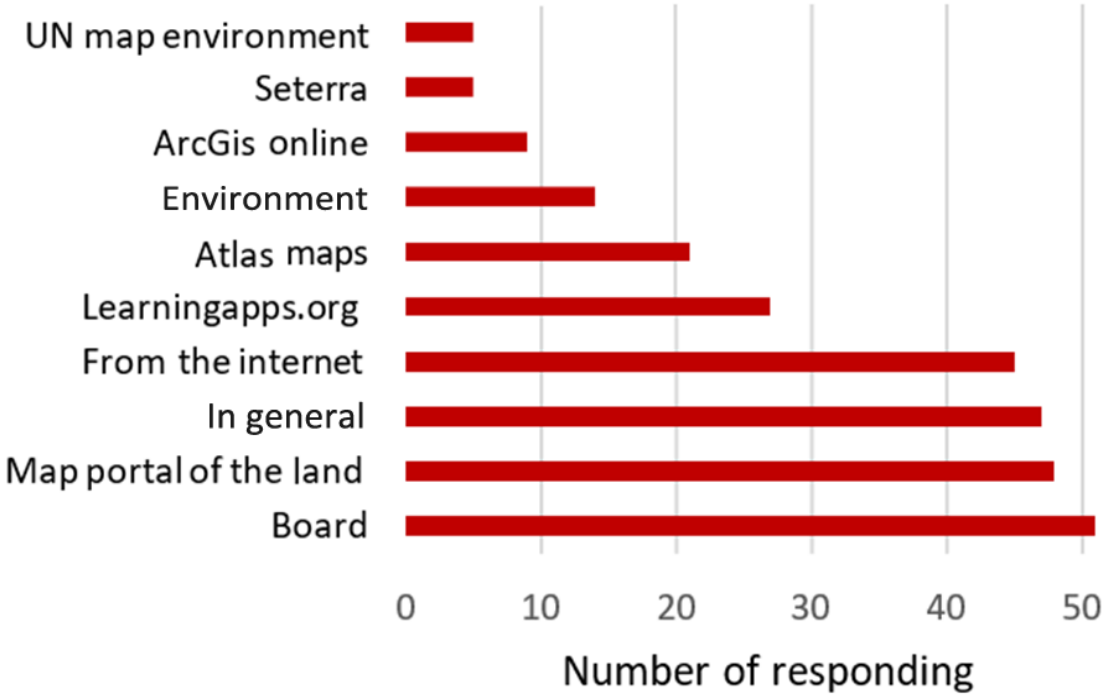

Figure 2.
Sources for those maps which used in teaching.

Questions about checking map knowledge revealed that 54% of teachers (N=41) did not organize any graded map tests in remote learning. Reasons: the inability to find a suitable method for organizing graded tasks or the fact that the topics being covered did not call for map knowledge.

The majority of teachers (N=53) deemed active learning tasks to be highly efficient during the remote learning period. Samples were following: constructing a photo collage during the course of an outdoor learning task; mapping out the surroundings of their home through stepping around the environment; using geography-related coordinates to navigate outside; recording a weather report, advertisement, or podcast in the Vocaroo environment; carrying out video translation tasks based on an English language video; drawing up diagrams and concept maps; working with sources other than the textbook or via Opiq (e.g. using foreign language databases, virtual map environments, and globes); working with photos (when searching for information and responses from photos); thematic presentations which have been created by students; the students impersonating their teacher; participation in the eTwinning projects where students are able to cooperate with students from other European schools and take part in an international learning project; the students drawing up teaching materials for younger students (such as secondary school students filming simple videos about the atmosphere for elementary school); and constantly updated research about specific countries.

However, 23 teachers responded that they did not use active learning in remote learning or used it very rarely. The reasons: such tasks were time-consuming, and the remote learning period was too short.

14 teachers mainly used discussion as the form of active learning, something which was conducted via various online environments. The main communications channels were as Google Meet (56%), Zoom (46%), and Teams (26%), but less-used channels were also mentioned (N<7), such as Messenger, WhatsApp, Viber, Skype, school internal communications platforms, BigBlueButton, the 8x8 video conference application, and email.

About *changes in the assessment of learning outcomes* during the remote learning period, it turned out that 61% of teachers (N=46) had made certain adjustments in the assessment criteria and models as

following as: changing the percentage scale; a constant assessment of the process; an assessment of the student activity in class; collecting points for an activity; more tasks with smaller volumes; grades for research tasks; foregoing tests or removing the impact from the tests on the final grade. In total, 16% of teachers (N=12) mentioned the fact that they did not give out numerical grades to students during the remote learning period, but instead assessed the students either to have passed or not.

Presentations and research-related tasks were mainly used *as graded tasks* in remote learning.

As regards *to the assessment by teachers in terms of teaching* up until December 2020, a total of 53% (N=40) were satisfied with the results and with how the lessons were conducted. In total, 63% (N=48) of teachers were satisfied with the contact levels they had achieved with students, while 14% (N=11) could not respond to this question, and 22% (N=17) believed that their contact with the students was poor. Only 24% (N=19) of teachers agreed that their students had achieved all the planned learning outcomes, while 49% (N=37) did not agree with the statement, and 26% (N=20) did not have a specific opinion about this matter. Those teachers who were at least 55 years old were less satisfied with student learning outcomes than were their younger colleagues. In the feedback, which was provided in relation to open-ended questions, teachers specified that it was difficult to obtain adequate information about the levels of knowledge which may have been gained by students via the internet as those students would often share their work with one another or copy their work from handy learning materials. The teachers remained unconvinced that the students had in fact acquired the knowledge.

In total, 39% of teachers (N=30) remarked that remote learning was an exciting process for them when it came to being able to test new methods and tools, and to bolster their own education. Age-based distribution shows that distance teaching was primarily exciting for teachers aged 35-44 (making up 74% of respondents). In the older age groups, no more than 37% agreed with this statement, which makes it possible to conclude that younger teachers may be more capable of navigating various digital tools and applications. In total, 83% (N=63) of teachers agreed that active learning was more complicated when it was being used in remote learning when compared to face-to-face learning.

The positive aspects of remote learning highlighted by the teachers following: the possibility of being able to use outdoor learning tasks; developing and improving skills to be able to work independently; developing responsibility, independence, and work distribution skills in the students; undertaking voluminous research tasks which would be too time-consuming for the classroom; the opportunity to be able to watch nature programs and videos which are longer than 45 minutes and which would be interrupted by the bell in the classroom; digital tools accelerate the process of grading tasks for the teacher.

The negative aspects of remote learning highlighted the following: the slower working pace of the students; difficulties in teaching using maps; the 'disappearance' of students, or - in other words - their lack of involvement in the learning process; the lack of direct communication; the lack of study trips; the reduced involvement of the students; the more time-consuming process of planning out lessons; the lack of practical work; and the difficulties faced by students as well as by teachers in terms of remaining motivated.

Feedback given on the *adequacy of teaching materials* revealed that 10 teachers believed that there could be ready-made tests which would check the learning outcomes in geography. Such suggestions were primarily made by younger and less-experienced teachers. Ready-made tests would make the process of preparing for tests less time-consuming for the teachers and would provide a welcome change for more experienced teachers. Teachers would also have examples for group work, working in pairs, and outdoor learning tasks, which cannot currently be found online. When it comes to checking knowledge acquired, it was suggested that a common aggregated database of geography-related questions could be formed in Moodle or another online environment which could be used by teachers to pick out questions and put together tests if necessary.

Videos and films were used quite frequently in teaching. Almost a quarter (N=18) of the teachers highlighted the lack of educational videos in Estonian which would be sufficiently short, concise, compliant with the national curriculum, and designed for use in class. 70 teachers noted that their main

Contemporary Research in Education and English Language Teaching
ISSN: 2641-0230
Vol. 6, No. 1, pp. 20-32, 2024
DOI: 10.55214/26410230.v6i1.1030

source for those videos was YouTube. The latter was followed by the archives of ERR (*Estonian Public Broadcasting Service*) and ETV2 (*Estonian Television Channel no 2 offered by ERR*) (N=52) and Opiq (N=43), which also include short clips.

57 teachers agreed that the availability of educational videos in Estonia was not good enough. Only 17 teachers found that there was a sufficient number of educational videos and that such videos were easily accessible, while two teachers did not have an opinion.

The teachers thought that the Estonian language documentaries on geography-related issues which were available via Estonian Public Broadcasting could remain available for a longer period, as they tend to expire relatively quickly and are often not available when the topic in question is being taught at school.

5. Discussion

Creating an efficient learning environment in the classroom, online, or in an integrated manner calls for long-term preparation, planning, and designing (Schultz & DeMers, 2020). Therefore, the quick switch from face-to-face learning to online was a temporary solution which was not preceded by any long planning process. According to Krull (2018) several teaching methods must be used in order to achieve the set learning objectives, and the research revealed the same: teachers highlighted the need for diversifying learning by using different learning methods in order to avoid homogeneity and boredom.

According to Krull (2018) using discussions in lessons helps students to internalize and generalize what is learned. As in-depth learning occurs in the communication between the teacher and the student (Gallagher & Cottingham, 2020; Oyeleke et al., 2015) teachers found that any tasks which called for communication tended to be efficient in remote learning and helped to achieve the set learning outcomes. They believed that those methods had to be used in class in order to avoid the social distance between the students and for them to be able to communicate with one another and the teacher. The advantage of the lecture method was the possibility it offered in terms of systematically imparting new areas of knowledge to the students. In general, there was consensus amongst the teachers that those video lessons which were able to provide an overview of the topic tend to be short and concise, usually between 10-15 minutes in duration, which was also a point which was highlighted in research by Daniel (2020).

The responses from the teachers revealed that active learning tasks worked well in remote learning, with these also being better strategies than passive learning (eg. traditional teacher-centered lectures) for all students according to Mathews and Flynn (2018) and Gallagher and Cottingham (2020). Pursuant to Ryan and Aasetre (2021) it is easier to understand a body of text if there is also an image accompanying that text. Using videos and television programs in the learning process creates various opportunities to be able to motivate learners and synthesize what was learned in theory. As geographical processes are often long-lasting, large-scale, and difficult to observe, it is important to visualize them by using videos and animations in order to understand them.

According to Parkinson (2020) maps and atlases are amongst the most important teaching materials available in geography classes. However, based on the results, it turned out to be difficult for half of those teachers who responded to find a suitable environment in which to organize map knowledge-based tasks, and they tended instead to integrate map-based questions into other tasks, which helped to develop the spatial thinking of the students. Based on recommendations by Weeden (2007) and Crosslin et al. (2020) to use discussions, miniature research projects, creative work, and reports in the assessment of students in terms of remote learning, Estonian geography teachers have also mainly used various creative tasks rather than relying on tests alone. Shaping the ability of the students to regulate themselves is one of the main objectives of a general educational school, and the process of assigning independent work is one of the main methodological solutions when it comes to being able to achieve this goal, which may be more difficult to support under conditions which involve remote learning Krull (2018). Pursuant to Savery (2005); Kuhfeld et al. (2020) and Mælan et al. (2021) it is difficult for those students who possess less self-regulation to be able to motivate themselves, as remote learning calls for

more independence and responsibility, something which may also drive students to cheat or to give up. One potential solution could be to start differentiating individual tasks in order to increase student motivation to learn, with less self-regulation being required because they have experienced success.

6. Conclusion

The research revealed that the structure of those lessons which were given by geography teachers was adjusted on the basis of the prevailing remote learning conditions, primarily by using more tasks which serve to activate students and avoiding lessons which were based on the teacher-centered lecture model. Forms of discussion were used most often in synchronized video lessons; almost all the teachers used discussion as one of their learning methods. Presentations were planned to ensure communication between students themselves and between students and teacher, as direct communication helps to synthesize what is being learned in theory. Those activities which are related to videos and films also proved popular learning methods amongst teachers. Almost half of those teachers who responded did not use map work in their remote learning. A minority of the teachers used work which required familiarization with maps in the e-testing environments or which had been integrated into worksheets. Teacher-centered lessons in the form of a lecture were deemed the most inefficient method to be used as teachers do not gain an adequate overview of student participation activity via webcams. It was found that positive results could be attained by using various longer, research-focused learning tasks in remote learning.

Online environments being used most often in the learning process were Opiq and e-koolikott. In addition, Opiq, Quizizz, Seterra, and Quizalize were also used in resolving graded tasks. To organize synchronized lessons in online environments, free applications such as Google Meet, Zoom, and Teams were used most often, while videos and educational films were primarily sourced from the various channels of the Estonian Public Broadcasting and YouTube.

More than half of respondents adjusted their assessment system without making any compromises with respect to learning outcomes. Changes were made in the assessment of student learning processes within the remote learning period such as, for example, the percentage scale being shifted, tests being foregone, and activity in classes being assessed, while learning targets were not lowered. Some teachers used non-differentiating grading, and some did not make any changes in their assessment of students when compared to face-to-face learning.

Almost half of the teachers were satisfied with the teaching process during remote learning, and with their contact with the students, which makes it possible to conclude that they could find a sufficient volume of functioning teaching methods and were sufficiently competent in using the tools which come with online information and communications technology. However, almost half of the teachers believed that their students failed to achieve the planned learning outcomes. The teachers complained about the lack of short, concise educational videos in the Estonian language which would be compliant with the national curriculum, as well as a common repository of teaching materials.

Funding:

This study received no specific financial support.

Institutional Review Board Statement:

The Ethical Committee of the School of Natural Sciences and Health/ Tallinn University, Estonia has granted approval for this study on 14 January 2020 (Ref. No. 10/14.01.20).

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Competing Interests:

The authors declare that they have no competing interests.

Authors' Contributions:

Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

Copyright:

References

Altuna, J., & Lareki, A. (2015). Analysis of the use of digital technologies in schools that implement different learning theories. *Journal of Educational Computing Research, 53*(2), 205-227. https://doi.org/10.1177/0735633115597869

Barry, D. M., & Kanematsu, H. (2020). *Teaching during the COVID-19 pandemic (ED606017). ERIC.* Retrieved from https://files.eric.ed.gov/fulltext/ED606017.pdf

Bednarz, R. S., & Bednarz, S. W. (2004). Geography education: The glass is half full and it's getting fuller. *The Professional Geographer, 56*(1), 22-27. https://doi.org/10.1111/j.0033-0124.2004.05601004.x

Bloom, B. S. (1956). *Taxonomy of educational objectives, handbook I: The cognitive domain.* New York: David McKay Co Inc.

Bourque, L., & Fielder, E. (2003). *How to conduct self-administered and mail surveys*: SAGE Publications, Inc. https://doi.org/10.4135/9781412984430.

Bryson, J. R., & Andres, L. (2020). Covid-19 and rapid adoption and improvisation of online teaching: Curating resources for extensive versus intensive online learning experiences. *Journal of Geography in Higher Education, 44*(4), 608-623. https://doi.org/10.1080/03098265.2020.1807478

Collins, L. (2018). The impact of paper versus digital map technology on students' spatial thinking skill acquisition. *Journal of Geography, 117*(4), 137-152. https://doi.org/10.1080/00221341.2017.1374990

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). London: Sage Publication.

Crosslin, M., Austin, A., Mandal, S., Clark, A., Dellinger, J. T., Dombrowsky, T., . . . Cavallo, A. (2020). *Measuring student learning in online courses: Assessment strategies that work. [Powerpoint slides].* Retrieved from https://utacrtle.org/docs/measuring-student-learning.pdf [Accessed 14.04.2021]

Daniel, S. J. (2020). Education and the COVID-19 pandemic. *Prospects, 49*(1), 91-96.

Edelson, D. C., Shavelson, R. J., & Wertheim, J. A. (2013). *A road map for 21st century geography education: Assesment.* A Report from the Assessment Committee of the Road Map for 21st Century Geography Education Project). Washington, DC: National Geographic Society.

European Training Foundation. (2020). *Coping with COVID-19, distance digital learning during COVID-19 in ETF partner countries. EPALE - Electronic Platform for Adult Learning in Europe.* Retrieved from https://epale.ec.europa.eu/en/resource-centre/content/coping-covid-19-distance-digital-learning-during-covid19-etf-partner

Gallagher, H. A., & Cottingham, B. (2020). *Improving the quality of distance and blended learning.* EdResearch For Recovery, Brief No. 8.

Garrett, B. L. (2011). Videographic geographies: Using digital video for geographic research. *Progress in Human Geography, 35*(4), 521-541. https://doi.org/10.1177/0309132510388337

Hebebci, M. T., Bertiz, Y., & Alan, S. (2020). Investigation of views of students and teachers on distance education practices during the Coronavirus (COVID-19) Pandemic. *International Journal of Technology in Education and Science, 4*(4), 267-282. https://doi.org/10.46328/ijtes.v4i4.113

Hirsjärvi, S., Remes, P., & Sajavaara, P. (2005). *Research and write (E. Uuspöld, Editor; I. Kraav, T. Kuurme, U. Kala, M.-L. Laherand, V. Maanso, & J. Orn, Translator).* Tallinn: Medicina.

Huang, R., Tlili, A., Chang, T.-W., Zhang, X., Nascimbeni, F., & Burgos, D. (2020). Disrupted classes, undisrupted learning during COVID-19 outbreak in China: Application of open educational practices and resources. *Smart Learning Environments, 7*, 1-15. https://doi.org/10.1186/s40561-020-00125-8

Jarvis, C. H., Dickie, J., & Brown, G. (2013). Going mobile: Perspectives on aligning learning and teaching in geography. *Journal of Geography in Higher Education, 37*(1), 76–91. http://dx.doi.org/10.1080/03098265.2012.694069

Kimmel, H. S., Carpinelli, J. D., Spak, G. T., & Rockland, R. H. (2020). A methodology for retaining student learning during the pandemic. In Sahin,I. & Shelley,M. (Ed.).(2020), Educational Practices during the COVID-19 Viral Outbreak: International Perspectives. In (pp. 1-18). USA: ISTES.

Koçoglu, E., & Tekdal, D. (2020). Analysis of distance education activities conducted during COVID-19 pandemic. *Educational Research and Reviews, 15*(9), 536-543. https://doi.org/10.5897/err2020.4033

Krull, E. (2018). *Handbook of educational psychology* (3rd ed.). Tartu: Tartu University Publishing House.
Kuhfeld, M., Soland, J., Tarasawa, B., Johnson, A., Ruzek, E., & Liu, J. (2020). Projecting the potential impact of COVID-19 school closures on academic achievement. *Educational Researcher, 49*(8), 549-565. https://doi.org/10.3102/0013189x20965918
Laanpere, M., & Puksand, H. (2021). *Smarter from a distance: New terms for digital learning.* Retrieved from https://www.youtube.com/watch?v=SyXydOf9OWQ&list=PLwyEA_bBMcYE0eoW-fh950Hqj0t7BvVVv&index=29&ab_channel=Haridus-jaNoorteamet
Lagerspetz, M. (2017). *Methods of social research: Introduction and introduction.* Tallinn: Tallinn University Press.
Lambert, D., & Morgan, J. (2010). *EBOOK: Teaching geography 11-18: A conceptual approach.* Maidenhead: McGraw-Hill Education.
Liiber, Ü. (2010). *About the application possibilities of ICT in geography education. Basic school science subject book.* Retrieved from https://oppekava.ee/ikt-rakendamisvoimalustest- geograafiaopetuses/
Lynch, K., Bednarz, B., Boxall, J., Chalmers, L., France, D., & Kesby, J. (2008). E- learning for geography's teaching and learning spaces. *Journal of Geography in Higher Education, 32*(1), 135–149. https://doi.org/10.1080/03098260701731694
Mælan, E. N., Gustavsen, A. M., Stranger-Johannessen, E., & Nordahl, T. (2021). Norwegian students' experiences of homeschooling during the COVID-19 pandemic. *European Journal of Special Needs Education, 36*(1), 5-19. https://doi.org/10.1080/08856257.2021.1872843
Mathews, A. J., & Flynn, K. C. (2018). Supporting experiential learning with no-cost digital tools: A comprehensive GPS lesson. *The Geography Teacher, 15*(3), 117-128. https://doi.org/10.1080/19338341.2018.1436461
Moore, M. G., & Anderson, W. G. (2007). *Handbook of distance education.* New Jersey: L. Erlbaum Associates.
Oppenheim, A. N. (1992). *Questionnaire design, interviewing, and attitude measurement.* London, New York: St. Martin's Press.
Õunapuu, L. (2014). *Qualitative and quantitative research methods in the social sciences.* Tartu: University of Tartu.
Oyeleke, O., Olugbenga, F. A., Oluwayemi, O. E., & Sunday, A. J. (2015). Changing the landscape of learning: Critical factors in open and distance learning. *Journal of Education and Practice, 6*(13), 53-61.
Parkinson, A. (2020). *Why study geography?* London: London Publishing Partnership.
Pedersen, P., Farrell, P., & McPhee, E. (2005). Paper versus pixel: Effectiveness of paper versus electronic maps to teach map reading skills in an introductory physical geography course. *Journal of Geography, 104*(5), 195-202. https://doi.org/10.1080/00221340508978984
Raath, S., & Golightly, A. (2017). Geography education students' experiences with a problem-based learning fieldwork activity. *Journal of Geography, 116*(5), 217-225. https://doi.org/10.1080/00221341.2016.1264059
Ryan, A. W., & Aasetre, J. (2021). Digital storytelling, student engagement and deep learning in geography. *Journal of Geography in Higher Education, 45*(3), 380-396. https://doi.org/10.1080/03098265.2020.1833319
Savery, J. R. (2005). BE VOCAL: Characteristics of successful online instructors. *Journal of Interactive Online Learning, 4*(2), 141-152.
Schultz, R. B., & DeMers, M. N. (2020). Transitioning from emergency remote learning to deep online learning experiences in geography education. *Journal of Geography, 119*(5), 142-146. https://doi.org/10.1080/00221341.2020.1813791
Simonson, M., & Berg, G. A. (2016). *Distance learning. Encyclopedia Britannica.* Retrieved from https://www.britannica.com/topic/distance-learning
Skarstein, F., & Wolff, L.-A. (2020). An issue of scale: The challenge of time, space and multitude in sustainability and geography education. *Education Sciences, 10*(2), 28. https://doi.org/10.3390/educsci10020028
Tammets, K., & Laanpere, M. (2018). *Final report.* Retrieved from https://drive.google.com/file/d/1zamR_fxLlW5DrERxlZuluIOIKcxC_uA8/view?usp=sharing&usp=embed_facebook
Termbases. (2012). *E-learning terms.* Retrieved from https://www.termbases.eu/de/termbase/view/9546447/et/et/?initial=S#/de/concept/view/1847264777/. [Accessed 26.01.2021]
Verdi, M. P., Crooks, S. M., & White, D. R. (2002). Learning effects of print and digital geographic maps. *Journal of Research on Computing in Education, 35*(2), 290-302. https://doi.org/10.1080/15391523.2002.10782387
Watson, W. R., Mong, C. J., & Harris, C. A. (2011). A case study of the in-class use of a video game for teaching high school history. *Computers & Education, 56*(2), 466-474. https://doi.org/10.1016/j.compedu.2010.09.007
Weeden, P. (2007). Students' perceptions of geography: Decision making at age 14. *Geography, 92*(1), 62-73. https://doi.org/10.1080/00167487.2007.12094182
Wouters, P., Van Nimwegen, C., Van Oostendorp, H., & Van Der Spek, E. D. (2013). A meta-analysis of the cognitive and motivational effects of serious games. *Journal of Educational Psychology, 105*(2), 249. https://doi.org/10.1037/a0031311
Ye, C., Gao, Y., Yu, J., & He, Y. (2021). Teaching human geography using a couplet game. *Journal of Geography in Higher Education, 45*(3), 435-445. https://doi.org/10.1080/03098265.2020.1849062