



**EUROGEO conference 2019, Paris**  
**Teaching Geography in challenging times**



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## 1 Conference Program overview

14 March	session	room 1	room 2	room 3	room 4
14.00	Welcome	keynote 1: Sarah and Bob Bednarz Setting New Priorities to Address Global Challenges			
15.15	session 1	Trends in Geography Assessment	Human Geography	Politics, identity, democracy 1	Teaching and learning 1
16.30	coffee				
17.00	session 2	Rural Geography	Powerful Geography	Politics, identity, democracy 2	Practical Geography / Sustainable Development
19.00	AGM	Annual meeting, elections			
20.30	dinner				
15 March	session	room 1	room 2	room 3	room 4
08.30	session 3	Physical Geography, climate	GIS, remote sensing	Position of Geography	Workshop: Trends in Geography Assessment
10.00	coffee				
10.30	Plenary	keynote 2: Chew Hung Chang Learning in Challenging Times			
11.30	session 4	Higher education	Digital Geography	Teaching and learning 2	Workshop: Critical heritage using serious game-based learning

## 2 KEYNOTES

### 2.1 Research in Geography Education: Setting New Priorities to Address Global Challenges

Sarah Witham Bednarz and Robert S. Bednarz, Professors Emeritus, Texas A&M University, College Station, Texas; s-bednarz@tamu.edu; r-bednarz@tamu.edu

#### *Abstract:*

The recent publication *Geography education for global understanding* (Demirici, de Miguel, and Bednarz 2018) highlighted many of the complex, grand challenges facing our planet and provided cogent arguments for the role of geography education in addressing these issues. However, only sparse and fragmented research exists concerning how education generally, and global-understanding education specifically, can prepare individuals for a complex and difficult future. Although educators agree on the role geography should play in this important endeavor, little empirical evidence of how to accomplish this cognitively, socially, or emotionally exists.

Two publications focused on geography education research, the International Declaration on Research in Geography Education (2015) and the United States-focused Road Map for Large-Scale Improvement of K-12 Geography Education (<https://www.nationalgeographic.org/education/programs/road-map-project/>) concur that geography education research is limited by scarce resources, by small numbers of researchers, and by a lack of “substantive foci,” that is, a clear, prioritized agenda to guide investigations. Each document provided suggestions about how to move forward. This paper will review these recommendations in light of new understandings of how learning happens, as captured in the view of the United States National Commission on Social, Emotional, and Academic Development (2019), which argues that to be effective, education must consider three distinct but related needs: social, emotional, and academic needs. The goal for geography education researchers must be to attend to the myriad requirements of learners to enable them to gain the significant knowledge, skills, and practices that will prepare them to be resilient and function successfully in challenging times. What research is needed? Where should we focus our limited resources? What needs immediate attention and what might we strategically postpone? Is this a critical turning point or simply a continuation of age-old structural issues?

## 2.2 Learning Geography in Challenging Times – learning to know, learning to do, learning to live together and learning to be.

Chew-Hung Chang, National Institute of Education, Nanyang Technological University, Singapore. [chewhung.chang@nie.edu.sg](mailto:chewhung.chang@nie.edu.sg)

### *Abstract*

Teaching geography has never been more challenging. The United Nations Educational, Scientific and Cultural Organization (UNESCO) seventeen Sustainable Development Goals (SDG) for 2030, outline the aspirations of a better world “of the people, by the people and for the people” (UNESCO, 2015). Unfortunately the aspiration for these 17 goals also describe some of the key challenges to humanity today. Set against rapidly evolving and uncertain issues in environment, economy and society, geography educators have to understand the needs of our learners in order to teach them well. Geography is concerned with asking questions of “Where is it?”, “What is it like?”, “Why is it there?”, “How did it happen?”, “What impact does it have?” and “How should it be managed for the mutual benefit of humanity and the natural environment?” (Commission on Geographical Education, 1992 p. 5). Indeed, school geography curricula have been keeping abreast with these fastchanging issues that affect humankind. These include increased focus on topics such as environmental change and globalisation. But education is not just about teaching knowledge.

The 'Delors Report' of 1996 to UNESCO of the International Commission on Education for the 21st century was premised on a holistic and integrated vision of education based on the four pillars of learning to know, learning to do, learning to be and learning to live together. This vision resonates with the aspirations of geographical education for the 21st century as outlined in the 2016 International Charter on Geographical Education. Good teaching and learning of Geography should consider the dimensions of curriculum design, instructional design and resource provision, as well as assessment for such learning activities. The speaker will use various examples from his encounters as a teacher in the classroom, geography education researcher, editor of a geographical education journal and a leader in a geographical association to illustrate how geographical education should and can prepare children in learning to know, learning to do, learning to be and learning to live together for challenging times ahead.

### *References*

Commission on Geographical Education (1992). International charter on geographical education. International Geographical Union, Commission on Geographical Education.

UNESCO. (2015). UNESCO and Sustainable Development Goals. Retrieved from UNESCO: <https://en.unesco.org/sdgs>

### 3 Sessions by author

First name(s)	Family name	session	Room	Topic
Leda	Almeida	session 3	2	GIS/remote sensing
Yilmaz	Ari	session 1	3	Politics, identity and democracy
Yilmaz	Ari	session 2	3	Politics, identity and democracy
Georgi	Bardarov	session 3	2	GIS/remote sensing
Erik	Bijsterbosch	session 1	1	TIGAS
Glorianne	Borg Axisa	session 3	3	Position of Geography
Terri	Bourke	session 1	1	TIGAS
Tereza	Češková	session 2	4	Practical Geography / Sustainable Development
Massimo	De Marchi	session 3	1	Physical Geography / climate change
Stelian	Dimitrov	session 3	2	GIS/remote sensing
Karl	Donert	session 2	2	Powerful Geography
Karl	Donert	session 1	4	Teaching and learning 1
Maria Helena	Esteves	session 3	3	Position of Geography
Gregor Constans	Falk	session 2	4	Practical Geography / Sustainable Development
Emanuela	Gamberoni	session 3	3	Position of Geography
Sumita	Gayen	session 3	1	Physical Geography / climate change
Jesus	Granados Sanchez	session 4	1	Higher education
Sayed Rafee	Hashemi	session 1	3	Politics, identity and democracy
Lenka	Havelková	session 3	2	GIS/remote sensing
Ryo	Iizuka	session 1	2	Human Geography
Johann Nikolaus	Janssen	session 2	1	Rural Geography
Johann Nikolaus	Janssen	session 4	3	Teaching and learning 2
Thomas	Jekel	session 4	2	Digital Geography
Injeong	Jo	session 1	1	TIGAS
Injeong	Jo	session 4	3	Teaching and learning 2
Viola	Karsai	session 1	2	Human Geography
Toshio	Kikuchi	session 2	1	Rural Geography
Kostis	Koutsopoulos	session 2	3	Politics, identity and democracy
Nati	Kranot	session 2	4	Practical Geography / Sustainable Development
Rod	Lane	session 1	1	TIGAS
María Luisa de	Lázaro y Torres	session 2	4	Practical Geography / Sustainable Development
María Luisa de	Lázaro y Torres	session 3	2	GIS/remote sensing
Michael	Leuchner	session 3	1	Physical Geography / climate change
Claudia	Lindner	session 3	1	Physical Geography / climate change
Michaela	Lindner-Fally	session 2	2	Powerful Geography
Veit	Maier	session 2	3	Politics, identity and democracy
Ramón	Martínez-Medina	session 2	4	Practical Geography / Sustainable Development

Kitti	Masinka	session 2	1	Rural Geography
Rafael	Miguel Gonzalez	session 1	4	Teaching and learning 1
Rafael	Miguel Gonzalez	session 2	2	Powerful Geography
Darina	Mísařová	session 2	4	Practical Geography / Sustainable Development
Brice	Mora	session 3	2	GIS/remote sensing
Kliment	Naydenov	session 3	2	GIS/remote sensing
Rahman	Nurković	session 3	3	Position of Geography
Gerry	O'Reilly	session 1	3	Politics, identity and democracy
Gerry	O'Reilly	session 2	3	Politics, identity and democracy
Judit	Péterfi	session 1	2	Human Geography
Guy Martin	Robinson	session 4	2	Digital Geography
Julius	Mitkevich-Dalechis	session 4	1	Higher education
Julius	Mitkevich-Dalechis	session 4	1	Higher education
Teresa	Sadoń-Osowiecka	session 1	4	Teaching and learning 1
Mareike	Schauss	session 3	1	Physical Geography / climate change
Nina	Scholten	session 1	4	Teaching and learning 1
Sebastian	Seidel	session 4	2	Digital Geography
Dmitrii	Sidorov	session 4	2	Digital Geography
Michael	Solem	session 1	1	TIGAS
Michael	Solem	session 2	2	Powerful Geography
Dubravka	Spevec	session 3	3	Position of Geography
An	Steegen	session 1	4	Teaching and learning 1
Joseph	Stoltman	session 1	1	TIGAS
Dávid	Sümeghy	session 1	3	Politics, identity and democracy
Bruce	Tamagno	session 2	2	Powerful Geography
Jaroslav	Vávra	session 4	3	Teaching and learning 2
Ruzica	Vuk	session 3	3	Position of Geography
Ivana	Vyslůžilová	session 1	2	Human Geography
Tal	Yaar	session 1	4	Teaching and learning 1
Taiyo	Yagasaki	session 2	2	Powerful Geography
Okkyong	Yoon	session 1	1	TIGAS
Okkyong	Yoon	session 4	3	Teaching and learning 2
Dimitar	Zhelev	session 3	2	GIS/remote sensing
Luc	Zwartjes	session 2	1	Rural Geography
Luc	Zwartjes	session 4	1	Higher education

## 4 Sessions

session	Room	Name	Paper title
session 1	1	Michael Solem	Trends in International Geography Assessment Study: Methodology
session 1	1	Rod Lane, Terri Bourke	Trends in International Geography Assessment Study: Assessment Framework
session 1	1	Okkyong Yoon, Injeong Jo	National Assessment of Educational Achievement (NAEA) of South Korea (Okkyong Yoon, Injeong Jo - co presentation)
session 1	1	Joseph Stoltman	Trends in International Geography Assessment Study (TIGAS): Building a Consensus
session 1	1	Erik Bijsterbosch	Trends in International Geography Assessment Study: Methodology
session 1	2	Judit Péterfi	Castle Utilization in tourism and settlement development – primary impact assessment of Somogy County's castle hotels
session 1	2	Viola Karsai	Dual interpretation of urbanization in Hungary and in East Central Europe
session 1	2	Ivana Vyslúžilová	New Paradigm of the European Urban Area due to Economic Globalization and Technological Revolution
session 1	2	Ryo Iizuka	The potential of education in tourism geography: A case study of the development and preservation of rurality in food tourism in the Westhoek region, Belgium
session 1	3	Dávid Sümeghy	Social cohesion and the radical right in Skåne
session 1	3	Sayed Rafee Hashemi	The migration of Afghans in the last decade and its challenges
session 1	3	Gerry O'Reilly	Facing Challenges: Aligning Geography, Geopolitics and Humanitarian Action
session 1	3	Yilmaz Ari	Commemorations and Identity: Cultural Geographies of Gallipoli Commemorations
session 1	4	Tal Yaar	Bordering on the impossible: Teaching (geographical) boundaries in the Israeli education system
session 1	4	Nina Scholten	Geography Teacher Noticing During Instruction: differences between novices and expert teachers
session 1	4	An Steegen	Fostering students geographic systems thinking by enriching causal diagrams with scale
session 1	4	Teresa Sadoń-Osowiecka	To better understanding the world - a value humanistic approach to school geography
session 1	4	Rafael de Miguel Gonzalez	Key challenges in Geography. EUROGEO Book Series at Springer
session 1	4	Karl Donert	Story Mapping: practical geography to reduce early school leaving
session 2	1	Kitti Masinka	Segregation and rural slums in Hungary - opportunities to reduce inequalities
session 2	1	Toshio Kikuchi	Commodification of Rural Spaces with the Development of Urban Farming in the Vancouver Metropolitan Area, British Columbia, CANADA
session 2	1	Luc Zwartjes	SEED: Smart Entrepreneurial Education and training in Digital farming
session 2	1	Johann Nikolaus Janssen	Investigations of the Development and Importance of the Marine Salt Production in Sicily
session 2	2	Michaela Lindner-	GI-Learner: Creating a learning line on spatial thinking



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session	Room	Name	Paper title
session 2	2	Rafael Miguel Gonzalez	Geography education and competences-based curriculum
session 2	2	Michael Solem	Powerful Geography
session 2	2	Taiyo Yagasaki	The Role of School District in the Reconstruction Process of Coastal Communities after the Great East Japan Earthquake: A Case Study of Urashima of Kesennuma City, Miyagi Prefecture, Japan
session 2	2	Bruce Tamagno	Geography Teachers and Gaia: Shock troops of conservation or harbingers of gloom?
session 2	2	Karl Donert	GeoCapabilities 3: a project developing capabilities for social justice in the Geography classroom
session 2	3	Gerry O'Reilly	Geographical Perspectives: Spaces of Memory - Memorialization and Democratization
session 2	3	Yilmaz Ari	Using Gallipoli Commemorations in (re)constructing collective identity in schools: The case of Balıkesir High School
session 2	3	Veit Maier	Vive le débat – spatial planning in geography lessons and its contribution to democracy
session 2	3	Kostis Koutsopoulos	FOSTER: Foster, Multiply and Connect Adult Education Project
session 2	4	Gregor Constans Falk	Working with the Geowindow - A critical reflection
session 2	4	Nati Kranot	the Annual Field Trip in Israel- The Role and Place of Geography Teachers and Geographical Education in the 21st Century
session 2	4	Tereza Češková, Darina Mísařová	The conceptions of the geographical fieldwork at primary and lower secondary school
session 2	4	María Luisa de Lázaro y Torres	Geographical Education and Sustainable Development Goals
session 2	4	Ramón Martínez-Medina	Sustainability in Spanish school geography: an analysis of primary education textbooks
session 3	1	Mareike Schauss	Epistemological beliefs in climate change education – initial evaluation of a school project
session 3	1	Claudia Lindner	Geography is STEM! Augmenting Reality to Convey Physical Geography and Remote Sensing in Class
session 3	1	Massimo De Marchi	Geovisualization of the energy transition: climate change, unburnable fossil fuels and geographical challenges
session 3	1	Michael Leuchner	An 'in-depth' analysis of drop size distribution in forest canopies
session 3	1	Sumita Gayen	Seismic Hazard Scenario of Malaga Province, Spain
session 3	2	María Luisa de Lázaro y Torres	The TPACK model enhances GIS as a transversal subject in teaching Geography (MYGEO project)
session 3	2	Lenka Havelková	Eye-tracking in geography education research: a case study of students' strategies during an analysis of thematic maps
session 3	2	Brice Mora	The RUS Service: supporting Sentinel users with free resources.
session 3	2	Stelian Dimitrov, Kliment Naydenov, Dimitar	New geospatial technologies require new skills and knowledge: the need of upgrade of geography

		Zhelev, Georgi Bardarov	curricula
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session	Room	Name	Paper title
session 3	2	Leda Almeida	Use of geotechnologies and territorial representation by the pedagogical residence in basic education.
session 3	3	Rahman Nurković	STEM Education in teaching Geography in Bosnia and Herzegovina
session 3	3	Maria Helena Esteves	What about Geography textbooks? Portuguese teachers's views and actions
session 3	3	Glorianne Borg Axisa	The State of School Geography in Malta: Challenges and Prospects
session 3	3	Dubravka Spevec, Ruzica Vuk	Does geography education in Croatia responds to needs of contemporary society?
session 3	3	Emanuela Gamberoni	Primary school and Citizenship education in Italy
session 4	1	Jesus Granados Sanchez	Scales of commitment: academics and their contributions to the SDGs
session 4	1	Julius Mitkevich-Dalechis	Aspects of Cartographic Materials Use in Teaching World Industry Development Trends at Universities
session 4	1	Julius Mitkevich-Dalechis	Methods of collecting and analyzing statistics on cross-country energy export and import
session 4	1	Luc Zwartjes	MyGeo: fostering the employability of students in higher education through promoting the acquisition of key skills related to the use GIS-tools
session 4	2	Sebastian Seidel	Experiencing political-geographical concepts in everyday life: pupils and their border experiences and concepts while playing video games
session 4	2	Dmitrii Sidorov	Online geography courses: learning the students
session 4	2	Thomas Jekel	Geomedia Contributions to Holocaust Education: a preliminary evaluation
session 4	2	Guy Martin Robinson	Using games in geographical teaching: Computers, boards and role-play
session 4	3	Okkyong Yoon	Teaching methodologies for a population unit in US APHG class
session 4	3	Injeong Jo	The Knowledge Base for Geography Teaching (GeoKBT): A Preliminary Model
session 4	3	Johann Nikolaus Janssen	Teaching Geography in challenging times from students perspectives
session 4	3	Jaroslav Vávra	Teaching and learning geography through the concept of place, Liberec approach, Czechia

## 5 Paper Abstracts

Family name	Institution	Paper title	Paper abstract
Almeida	Sao Paulo State University - UNESP	Use of geotechnologies and territorial representation by the pedagogical residence in basic education.	Presenting less and less investment both in school structures and in teacher training, the pedagogical residency program was launched. The objective of this program is to improve the training of undergraduate students of teaching courses, developing a relationship between the theory seen in the university and the professional practice, directly in the school environment. Recognizing the deficiencies and qualities of the school, it can be verified a need for elucidation of regional aspects and close to the reality of the student that aim to assist in understanding the space as a whole. The objective is to use the model as an aid in the teaching of Geography, aiming to bring the reality of the student to the classroom using practical examples and close to the reality of each one on the river of the lived region.
Ari	Bandirma Onyedi Eylül University	Using Gallipoli Commemorations in (re)constructing collective identity in schools: The case of Balıkesir High School	The Gallipoli War has been instrumental in constructing identities in several countries. Multiple nations have held commemorative activities in different continents. Each of the countries has used the historical event for various purposes in different countries in different times. Commemorating the Gallipoli War in Turkey has served for different purposes over time, reflecting various ideologies and agendas of the commemorators. The remembrance activities in Turkey started in 1916 just after a year of the War in the Gallipoli Peninsula. However, commemorations have not confined to the peninsula only, spreading out starting from 1916. This research deals with the reflection and use of the commemorations in schools and school textbooks. The case of Balıkesir High School was used to investigate the effects of commemorations in building collective identity. Balıkesir High School had no graduates in records in 1915 because all the final year students went to Gallipoli and never returned. This is one of the most significant events in the 135 years history of the school. How and to what purpose the particular linkage with the Gallipoli War has been used to (re)construct identity over the years in school. It is important to understand how this event is used to create an ideology and to inherit by the new generation of students in those schools and in the communities at large.
ARI	Bandirma Onyedi Eylül University	Commemorations and Identity: Cultural Geographies of Gallipoli Commemorations	Places of commemorations are important in terms of social, political and cultural values and realities. Studying the commemoration practices is a multidisciplinary endeavour and geographers are interested in the locational, spatial and material aspect of commemorations. This research deals with how the discourses of the past are constructed socially and expressed materially in Gallipoli commemorations with a cultural geographic perspective. Gallipoli is a place where multiple nations have commemorated antagonistic histories in the same place for many years. The sanctity of several sites has been reinforced over the years by the construction of additional monuments and memorials at the peninsula. However, commemorations have not confined to the peninsula only, spreading out starting from 1916. Multiple nations have held commemorative activities in different

			<p>continents. This research deals with the spatial aspect of the commemorations throughout Turkey historically to understand the purposes the commemorations have served through the time by looking at the intensity of commemorations in different places and times. This requires an understanding of the origins of and processes through which the commemoration activities have diffused in the country. The published research, memorials, and archival materials were examined to determine the spatial dimension of the commemorations. The commemorative activities in different cities and times were examined to determine the significance of the events for the local communities and beyond. Particular emphasis was given to the schools that have no graduates in records in 1915 because all the final year students went to Gallipoli and never returned. It is important to understand how this event is used to create an ideology and to inherit by the new generation of students in those schools and in the communities at large.</p> <p>Keywords: Gallipoli, Commemorations, place and identity, cultural geography, WWI</p>
Bijsterbosch	Windesheim University of Applied Sciences	TIGAS framework and feasibility of test items	<p>For the past two years, a framework for an international geography assessment in lower secondary education has been designed (the TIGAS-framework). As part of the validation process of this assessment framework, prototype test items from several national and provincial assessments were selected. These prototype test items are supposed to be in line with the content domains and distinct cognitive levels of the assessment framework. In this workshop some of the selected examples of test items will be presented. Practitioners will be asked to give their opinion on these test items; e.g. if these examples are in line with the framework and if these items match with the expected difficulty for the target group. Another issue that will be addressed in this workshop is how these items could be judged and scored. What is the expected level of performance? How practical and feasible is a model to judge and score these items?</p>
Borg Axisa	University of Malta	The State of School Geography in Malta: Challenges and Prospects	<p>Geography is a core entitlement to students throughout compulsory schooling (MEDE 2012) in Malta. However, as in many European countries the presence of Geography in schools is threatened (Donert, 2007, Uhlenwinkel et al, 2017) considering also that in several instances, locally the relevance of a subject in school is often equated to employability opportunities rather than to its broader educational value. Several reforms within the education system over the past decade have affected directly school Geography including the reduction in the number of lessons per week and the change in policy regarding the language of instruction. This reflects that policy-makers may have a traditional view of Geography and do not see its potential.</p> <p>The evaluation of the state of school geography within the Maltese context is not considered only in terms of the numerous barriers identified by teachers of geography due to the imposing structured system they have to operate in, but also in terms of the teachers' understanding of Geography education. This underpins the teachers' role as 'curriculum makers' as s/he decides where to take the learners. The students' engagement with geographical knowledge depends on the teachers' pedagogic choices and approach, whether it will reinforce the traditional perception towards the subject as infallible knowledge based on recall or whether to involve the students in the teaching-learning process through 'geographical thinking'.</p> <p>The challenges and affordances for Geography within the school context in Malta were researched through a</p>

			<p>multi-method approach among teachers of geography in State Schools namely; surveys, interviews and focus group discussions. Overall, teachers feel helpless at the challenges raised by the system itself. However when it comes to the teaching-strategies to adopt in class, their positions vary.</p> <p>References:</p> <p>Donert, K., 2007. Aspects of the state of Geography in European higher Education. Liverpool, HERODOT Network for geography in higher education.</p> <p>Ministry For Education and Employment, 2012. A National Curriculum Framework for All 2012, Malta: MEDE.</p> <p>Jackson, P., 2006. Thinking Geographically. Geography, 91(3), pp. 199-204.</p> <p>Lambert, D. and Morgan, J., 2010. Teaching Geography 11-18, A Conceptual Approach. s.l.:Open University Press.</p> <p>Uhlenwinkel, A., Béneker, T., Bladh, G., Tani, S &amp; Lambert, D. (2017) GeoCapabilities and curriculum leadership: balancing the priorities of aim-based and knowledge-led curriculum thinking in schools, International Research in Geographical and Environmental Education, 26 (4), pp 327-341.</p>
Češková, Mísařová	Masaryk University, Faculty of Education, Dep. of Geography	The conceptions of the geographical fieldwork at primary and lower secondary school	<p>During the past 50 years, the forms of fieldwork have developed from conventional field excursions through field research based on hypotheses testing to inquiry-based education. Fieldwork contributes to the development of all pupils' key competences, to linking theoretical knowledge and practice as well as to the development of natural physical activity and healthy lifestyle.</p> <p>If the fieldwork should work, it is necessary for a school to have a coherent system – a conception which would take into account the specifics of the school surroundings, its specialization and type. The conception should also allow for the continuity with regards to the curriculum and its progression, for the interconnection of the indoor and school instruction, and for linking of current topics with fieldwork in the actual surroundings.</p> <p>The aim of the paper is to present the optimal (i.e. comprehensive and coherent) conception of fieldwork in geographical curriculum for primary and lower secondary school. The procedure of designing the conception of fieldwork as well as concrete examples of arranging the fieldwork into geographical curriculum at primary and lower secondary school will be presented. This paper introduces partial results of applied research project supported by TACR.</p>
Chang	Nanyang Technological University, National Institute of Education, Singapore	Keynote: Learning Geography in Challenging Times – learning to know, learning to do, learning to live together and learning to be.	<p>Teaching geography has never been more challenging. The United Nations Educational, Scientific and Cultural Organization (UNESCO) seventeen Sustainable Development Goals (SDG) for 2030, outline the aspirations of a better world “of the people, by the people and for the people” (UNESCO, 2015). Unfortunately the aspiration for these 17 goals also describe some of the key challenges to humanity today. Set against rapidly evolving and uncertain issues in environment, economy and society, geography educators have to understand the needs of our learners in order to teach them well. Geography is concerned with asking questions of “Where is it?”, “What is it like?”, “Why is it there?”, “How did it happen?”, “What impact does it have?” and “How should it be managed for the mutual benefit of humanity and the natural environment?” (Commission on Geographical Education, 1992 p. 5). Indeed, school geography curricula have been keeping abreast with these fast-changing issues that affect humankind. These include increased focus on topics such as environmental change and globalisation. But</p>

			<p>education is not just about teaching knowledge. The 'Delors Report' of 1996 to UNESCO of the International Commission on Education for the 21st century was premised on a holistic and integrated vision of education based on the four pillars of learning to know, learning to do, learning to be and learning to live together. This vision resonates with the aspirations of geographical education for the 21st century as outlined in the 2016 International Charter on Geographical Education. Good teaching and learning of Geography should consider the dimensions of curriculum design, instructional design and resource provision, as well as assessment for such learning activities. The speaker will use various examples from his encounters as a teacher in the classroom, geography education researcher, editor of a geographical education journal and a leader in a geographical association to illustrate how geographical education should and can prepare children in learning to know, learning to do, learning to be and learning to live together for challenging times ahead.</p>
De Marchi	University of Padova - Master GIScience	Geovisualization of the energy transition: climate change, unburnable fossil fuels and geographical challenges	<p>Climate change is the biggest challenge for current and future generations in the area of sustainability, as reaffirmed in the 13th objective of the Sustainable Development Agenda 2030. Ensuring access to affordable, reliable, sustainable and modern energy for all (objective 7 of the 2030 Agenda) means overcoming the current energy system that contributes 60% of total greenhouse gas emissions (UN, 2017). McGlade and Ekins (2015), in an article in Nature in 2015, estimate that, to limit the temperature increase to 2 ° C, over 80% of coal, 50% of gas and 30% of reserves of oil should remain stored in the subsoil; they also show how the use of all available hydrocarbon reserves would produce emissions of 11,000 Gt, well above the estimated range of 870-1,240 Gt for the period 2011-2050.</p> <p>Globally, only one political experiment was carried out, between 2007 and 2013, in the Yasuní National Park (Ecuador), to leave the hydrocarbons underground, with the simultaneous creation of an international compensation fund. Although the initiative, called Yasuní-ITT, was then abandoned, the idea is still the subject of reflection by the scientific community and civil society who created the neologism Yasunización.</p> <p>Leaving fossil fuel underground by combining different points of view: from a geographical perspective in defining criteria to choose "where" to leave fossil fuels underground; to policies and initiatives aimed at reducing the production of fossil fuels; to the economic dimension capable of highlighting the total costs of hydrocarbon production and the costs necessary for the energy transition.</p>
Dimitrov, Naydenov, Zhelev, Bardarov	Sofia University "St. Kliment Ohridski"	New geospatial technologies require new skills and knowledge: the need of upgrade of geography curricula	<p>The development of geospatial technologies has always been one of the main drivers of the development and diversification of geographic knowledge. However, during the last 10 years, this has become particularly intense, with the introduction of technologies such as online GIS, unmanned aerial systems and mobile GIS applications, requiring more and more expansion of technical and technological skills of professional geographers. On the other hand, the development of these technologies ensures like never before access to adequate data and information resources, while allowing research to focus on micro-spatial levels, which in turn leads to the enhancement of the practical aspects of geographic science.</p> <p>This article aims to present and open discussion about the necessary changes in geographic university education in view of the rapid and accelerated development of geo-spatial technologies. The opportunities for professional</p>

			realization of the graduates of geographic programs are related not only to the development of geospatial technologies but also to the needs of solving the everyday societal problems, requiring the "delivery" of geographic knowledge and information in a certain volume and quality.
Donert	EUROGEO	GeoCapabilities 3: a project developing capabilities for social justice in the Geography classroom	<p>A capabilities approach repositions the contribution of the discipline (geography) to the education of young people within a capabilities framework. It derives from the original work of Amartya Sen and Martha Nussbaum on welfare economics and is an attempt to take capability principles and locate them within a geography education context.</p> <p>Powerful disciplinary knowledge (PDK) is fundamental to the GeoCapabilities approach, yet teachers in more challenging schools have been found to be constrained in their ability to enact a 'powerful' curriculum which may transform young people's lives (see Mitchell, 2015).</p> <p>This presentation will look at the intention of GeoCapabilities 3, which is to support teachers in developing their curriculum making capacity and in so doing enable them to engage with important curriculum questions such as what kinds of geographical knowledge are taught in schools, who decides and why, and what kinds of pedagogies are needed to teach powerful disciplinary knowledge (PDK) to students.</p> <p>Subject leadership is a key principle of GeoCapabilities and the project aims to develop the associate teachers as curriculum leaders who will support other geography teachers in similar contexts in their countries to use GeoCapabilities to enhance their geography teaching. Through developing curriculum leadership the project will generate a sustainable momentum, which will carry forward as the associate teachers work with other teachers in future, disseminating the GeoCapabilities approach.</p>
Donert	EUROGEO	Story Mapping: practical geography to reduce early school leaving	This paper describes the role of Storytelling with Maps in supporting young people who are at risk of leaving school early. It discusses the Tell Your Story and My Storymap Projects and the impact of encouraging storytelling of secondary students
Esteves	Universidade de Lisboa, Instituto de Geografia e Ordenamento do Território	What about Geography textbooks? Portuguese teachers's views and actions	This research aims at understanding how Portuguese Geography teachers use textbooks in the classroom and how they perceive their importance for students. It was also important to research how textbooks should adapt to new challenges related to School Geography in Portugal.
Falk	University of Education Freiburg	Working with the Geowindow - A critical reflection	The aim of the GeoWindow project was to develop such a device for teaching "applied" Geography. It offers a general infrastructure to create models in geographic contexts come to life easily and quickly. It is a "test tube" for visualization, not only of static images but also to display processes in the Earth system. The paper will analyse didactical pros and cons of the practical implementation of the Geowindow. Eventually, we will provide a short demonstration of how to use the device. Gregor C. Falk and Mathias Faller
Gamberoni	University of	Primary school and	This paper discusses the relationship between geography education and citizenship education in Italian primary

	Verona	Citizenship education in Italy	school. In particular, an analysis of the meaning of the concept of citizenship will be carried out considering both the Italian national guidelines and the new emerging sceneries in order to understand the implications of the education to the global citizenship. This will be pursued by analyzing how geographical education could be a useful tool to face this topic. Some examples will be provided.
Gayen	Universidad de Sevilla	Seismic Hazard Scenario of Malaga Province, Spain	<p>Earthquakes are generally concentrated in the edge regions of plate of the whole world. Spain is considered as a country of moderate seismic activity compared to other Mediterranean countries. The seismic activity is more intense in the south-east part of Spain. Malaga province is situated in the south-east part of Spain and near the boundary between the African and Eurasian plates. Malaga has experienced many earthquakes in the past and suffered severe damage by strong earthquakes. To measure the effect of an earthquake on the ground “peak ground acceleration (PGA)” is commonly used. The PGA is the largest increase in velocity recorded by a particular station during an earthquake. The purpose of this work is to create seismic zone map of Malaga province depending on PGA (return period of 475 years), which is important for assessing the hazard and urban regional planning in earthquake areas. The result shows that vulnerability of earthquake in the province increases from west to east.</p> <p>Key words: Earthquake, peak ground acceleration, seismic zone</p> <p>Sumita Gayen(1), Dr. Ismael Vallejo Villalta (1), Dr. Sk. Mafizul Haque (2)</p> <p>(1) Departamento de Geografía Física y Análisis Geográfico Regional, Universidad de Sevilla, Spain</p> <p>(2) Department of Geography, University of Calcutta, India</p>
Granados Sanchez	University of Girona	Scales of commitment: academics and their contributions to the SDGs	The aim of the paper is to present the results of a research study about the contribution of a group of university teachers and professors to the sustainable development goals (SDGs). The research asked the participants to identify their contribution to the SDGs in six different scales: personal actions in the ordinary life; professional actions at classroom level (curriculum and pedagogy); professional actions as a member of the Faculty and the University (how do you contribute to the SDGs in you institution, as part of the staff?); the personal commitment with the community; the role of the university, as institution, to bring the SDGs into the university life (for students, staff and others, on campus); the university engagement with its community (how the university as institution is contributing to the SDGs in its community).
Hashemi	Marmara University	The migration of Afghans in the last decade and its challenges	Geopolitical factors are the migration of Afghans, one of the public issues in the world. And now, the phenomenon of migration has become one of the problems in the world. It forces the boundaries of nations. And under what conditions are the countries considered to be intentional or unintentional at the high level of immigration. Is this migration a tight link to the issues of ethnic texture at national level? Why relatives Why do Afghan tribes migrate to ethnic, neighboring, regional and regional regions? On this occasion, I wanted to examine the migration in terms of geopolitical factors.
Havelková	Centre for Geographical and	Eye-tracking in geography education research: a case	As a consequence of the wide availability of GISs and the large volume of data, there has been an increase in the use of maps, thematic maps in particular, for the depiction of spatial information. Even though significant progress has been made in research into map work over the last decades, there is still a need for an investigation



	Environmental Education, Faculty of Science, Charles University	study of students' strategies during an analysis of thematic maps	<p>into the cognitive mechanisms which underlie map work, specifically the strategies used when working with maps.</p> <p>Therefore, the presented study has been focused on the strategies used during an analysis of four types of thematic maps on the basis of the use of eye-tracking technology. Even though there are various methodological approaches for investigating students' strategies, it is the eye-tracking that is becoming more and more frequently used for identifying them.</p> <p>The results of the experiment have helped to supplement and expand current understanding of students' process of solving tasks requiring the map analysis. It is apparent that the strategies selected when analysing maps are highly individualised. Furthermore, they are distinguished by frequent flitting of the eyes between the individual parts of the task. On the other hand, it is apparent from the results of the eye-tracking experiment that the participants' strategy efficiency increased during the testing. At the same time, the most frequently utilised sequence was: task instruction → map → (scale/north arrow) → (legend) → possible answers.</p>
Iizuka	Shumei University, Japan	The potential of education in tourism geography: A case study of the development and preservation of rurality in food tourism in the Westhoek region, Belgium	<p>For the last several decades, tourist interests have diversified, and ruralities derived from traditional cultures and lifestyles are valued as tourism resources with authenticity. For food tourism depending on such rural resources, how ruralities commodify directly affects the quality of tourism itself. Moreover, in the field of tourism geography education, practices of food tourism are seen as case studies for understanding local areas. Thus, this paper explores the progress of the commodification of ruralities through the development of food tourism using traditional culture and life in West-Flanders in the Westhoek region, a rural touristic area in Belgium. The application of the case study for education in tourism geography is subsequently discussed. Specifically, the development process of promotions and programmes for food tourism in the Westhoek region is outlined, and the expressions of the commodification of rurality in public materials, brochures and homepages are reviewed. Further, the means of offering rurality as a commodity are captured from interviews with related actors. Consequently, in the Westhoek region, the commodification of rurality at each stage of the food supply chain from producer to food service industry is taken and consumed by tourists. That situation makes the region a strong and sophisticated food-tourist area and is illustrative for tourism geography education.</p>
Janssen	EGEA - European Geography Association for Students and Young Geographers	Investigations of the Development and Importance of the Marine Salt Production in Sicily	<p>The production of sea salt from seawater is the oldest way of salt production in the world. It has been and is still very common along the coasts of the Mediterranean Sea. The Phoenicians were the first to construct ponds for the sea salt production at the western coast of Sicily, a few centuries before Christ. The production expanded around the whole island of Sicily, but nowadays there are just a few salt works left, which still produce sea salt. What happened to most of the salt works? How are the remaining salt works used? Which importance has the production of sea salt nowadays? What other ecosystem services do the salt works provide and how will they develop in the future?</p> <p>The research gives answers to those questions by concentrating on the development of the salt works of Trapani and Marsala at the west coast of Sicily in the last thirty years and their importance for the region and the people today.</p>

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Janssen	EGEA - European Geography Association for Students and Young Geographers	Teaching Geography in challenging times from students perspectives	<p>As a student and member of EGEA - European Geography Association for Students and Young Geographers I would also like to contribute to the main theme of the conference "Teaching Geography in challenging times". Being also chairman of GeoDACH - Vertretung Deutschsprachiger Geographiestudierender e.V. (official representation of german speaking students in Germany, Austria and Switzerland) I am constantly dealing with questions about the future of Geography in general and especially at universities. As an association we recently published a policy paper on what Geography should do to improve its impact on society.</p> <p>"Geographie has to...</p> <ul style="list-style-type: none"> <li>...take responsibility</li> <li>...be shaped actively</li> <li>...work interdisciplinary</li> <li>...work inclusive</li> <li>...scrutinize critically</li> <li>...emphasize environmental and climatic aspects</li> <li>...underline its relevance as a school subject</li> <li>...sharpen the awareness for man-environment relationships</li> <li>...participate actively in public debates</li> <li>...support open-minded and tolerant discourses"</li> </ul> <p>Source: <a href="http://geodach.org/wp-content/uploads/2018/12/GeoDACH-Beschluss-Positionspapier-Kiel-ist-tot-Lang-lebe-Kiel.pdf">http://geodach.org/wp-content/uploads/2018/12/GeoDACH-Beschluss-Positionspapier-Kiel-ist-tot-Lang-lebe-Kiel.pdf</a></p> <p>In addition to this, EGEA enables me regular exchanges with students from all over Europe. Through those I get insights on very different challenges, Geography and especially teaching Geography faces today. I would be more than happy to participate and share my experiences as a student in panels, discussions or other sessions which directly refer to "Teaching Geography in challenging times".</p>
Jekel	University of	Thomas Jekel &	A variety of geomedia-based platforms have recently been developed which make specific aspects of the

	Salzburg	Katharina Wöhs, Geomedia Contributions to Holocaust Education: a preliminary evaluation	holocaust accessible on handheld devices. These include simple databases, as in the case of Memento Vienna (Schellenbacher 2017), that relay cartographic access to users, as well as pedagogically more elaborate concepts which include the re-writing the history of places (Wöhs et al. 2018; Gordon, Elwood & Mitchell 2016). However, few of these learning environments include an evaluation of the student experience. This presentation encompasses two conceptions of geomedia-based holocaust education in the cities of Vienna and Salzburg, which combine geo-databases with wikis. It reports an exploratory evaluation of these places of remembrance in a practical application of a local field course and on qualitative interviews with secondary students.
Jo	Texas State University	The Knowledge Base for Geography Teaching (GeoKBT): A Preliminary Model	Funded by the National Center for Research in Geography Education, this study investigated the nature of the knowledge needed for geography teaching. Informed by existing research about science and mathematics teachers' pedagogical content knowledge (PCK), the research group developed a conceptual model of the knowledge base for geography teaching, identifying its six key components. The conceptual model was refined and revised according to the results of case studies of four expert geography teachers. The resulting preliminary model (GeoKBT) is offered to the geography education community to inform both geography teacher education and further research on geography-related pedagogical knowledge.
Karsai	University of Pécs	Dual interpretation of urbanization in Hungary and in East Central Europe	Obviously, the whole world is urbanizing, having a different pace and character in both time and space. East-Central Europe can also be characterised by a specific urbanisation due to its social, economic and historic background. Urbanisation took place in this region in a delayed and distorted form, and the centrally planned post-war period did not help to reduce the lag in that respect. Looking at the figures, Hungary is highly urbanised, comparable to the west of the continent; however, the urban quality (e. g. built in environment or life quality) is far from the desired developed countries' attributes. Having a town or city rank is less and less important in the west, while in the Eastern part of the continent we still experience a higher prestige of the rank, people think that a town or city would offer better qualities. The fast-paced urbanization, which took place in this special situation and its two interpretations give rise to tensions at many points: "urban" and "villager" living together in a settlement which is still developing between the two extremes. The aim of the research is to present the contradictions of two aspects of urbanization in Hungary, which are generated in part by the special associations regarding the meaning of the term "urban".
Kikuchi	Tokyo Metropolitan University	Commodification of Rural Spaces with the Development of Urban Farming in the Vancouver Metropolitan Area, British Colombia, CANADA	This study aimed to clarify the commodification of rural spaces in relation to the development of urban farming, focusing on the concept of community gardens in the Vancouver metropolitan area in the district of British Columbia in Canada. Urban agriculture in the Vancouver metropolitan area differed from suburban agriculture, as the emphasis was placed on maintaining green spaces and leisure spaces as community gardens rather than as spaces to produce agricultural products for food supply. Consequently, the existence of community gardens has become a node that connects urbanity (urban likeness) and rurality (rural distinctiveness) in the suburbs of the metropolitan area, particularly the community gardens of Richmond.
Koutsopou	EUROGEO	FOSTER: Foster,	EUROGEO is a partner in the FOSTER Project which aims to encourage democratic engagement of adults through

los		Multiply and Connect Adult Education Project	establishing a catalogue of best practices in digital education. This presentation introduces the project, its aims objectives and outcomes.
Kranot	University of Haifa	The Annual Field Trip in Israel- The Role and Place of Geography Teachers and Geographical Education in the 21st Century	<p>"Once a year, every class will take a long field trip, the goal of which is to know the land in an experiential way" (The Israeli official curriculum in Geography, 1959).</p> <p>The Annual Field Trip in Israel is a unique educational phenomenon, being an obligatory outdoor event in the public educational system from 1st to 12th grades. It was created and molded more than a century ago, by teachers who aspired to implement Natural Pedagogy, teach in the field and inculcate in their students a sense of personal attachment to the land.</p> <p>After four decades during which field trips were initiated and executed by teachers, they became institutionalized. Thus, The Annual Field Trip demonstrates an educational event that was born bottom-up, and then became directed and supervised by the state. Over the years, there was a shift in the priorities of the stated goals of the Annual Field Trip: In its beginning, the Field Trip served mainly pedagogical goals, using the landscape as means to demonstrate Geographical Phenomena. Later on, since the 1940's, national education became the dominant goal, thus making the landscape both the objective ("To know and to love the land") and the means to reach it.</p> <p>Today, more than a century later, it may be asked how does (and how should) Geography, as an educational discipline, deal with this unique form of outdoor education in changing, challenging times? How effective are field-trips as a means of education? What is the role and the place of teachers, who originally created the Annual Field Trips, in this complex arena?</p> <p>The presentation is based on my PhD research, on which I examine the gap between the goals of the Annual Field Trip and their Fulfillment. The research, which is based on field observations and interviews, focuses on Geography teachers, their role definition and role perception and their actions during Annual Field Trips. I will present preliminary findings and compare them to the Annual Field Trip at its beginning in the early 20th century, as described by the first teachers. This comparison emphasizes the importance of teachers in fulfilling the goals of Geographical Education in the field, especially in a digital era of information flooding.</p>
Lane, Bourke	Macquarie University, Queensland University of Technology	Trends in International Geography Assessment Study: Assessment Framework	<p>This provides a progress report on the National Center for Research in Geography Education's research initiative to design and develop a Trends in International Geography Assessment Study (TIGAS). The session examines the development and validation of the framework for the assessment which is designed to provide educators and policymakers with international comparative data on geography education and advance knowledge of factors influencing the geographic literacy of students in lower secondary education. Feedback from a range of international stakeholders is discussed along with the implications for further refinement of the framework.</p>
Lázaro y Torres	Universidad Nacional de	Geographical Education and	Education in Sustainable Development Goals (SDGs) is an important task in training teachers. It is easy to relate geographic issues such as the natural environment, socioeconomic topics, and the population or cities which link

	Educación a Distancia	Sustainable Development Goals	with different aspects of sustainability. The visualization provided by WebGIS facilitates the understanding of the space in which we move, and brings us closer to spaces that we would otherwise not be able to access. Thus, designing a WebGIS reinforces learning and is integrated with a novel educational trend whose success in university lectures is justified by numerous authors (Kim et al 2013, Lázaro et al, 2014; Lázaro, Izquierdo and González, 2016; Lázaro, De Miguel and González, 2018).
Lázaro y Torres	Universidad Nacional de Educación a Distancia	The TPACK model enhances GIS as a transversal subject in teaching Geography (MYGEO project)	The TPACK (Technological Pedagogical Content Knowledge) model (Mishra and Koehler, 2006), appears to be a suitable approach for university teaching. As it can answer: a) What to say? teaching geography (content) b) How to say it pedagogically? (pedagogy). c) What tools are most appropriate to use? GIS as medium (technology). Thus, what is necessary to go ahead with the model is for university professors to obtain certain skills. Good practices used by the professors are sought in order to detect the most relevant skills necessary. Authors: ML de Lázaro (Coord), B Azcárate, MP Borderías, D Cocero, A Fernández, J Fernández-Portela, J López-Davalillo, EM Martín, FJ Morales-Yago, C Muguruza, A Nieto, CJ Pardo, R Pellitero, ME Prieto.
Leuchner	Springer Nature	An 'in-depth' analysis of drop size distribution in forest canopies	This paper presents a case study on the transformation of drop size distribution (DSD) of rainfall by European beech and Norway spruce crowns in a mixed forest in Southern Germany. DSD was measured simultaneously above and below the forest canopy to assess incident rainfall and throughfall properties of rain events over a two month period in summer. Clear shifts in drop size and temporal distributions of incoming rainfall were observed while penetrating the canopies of both species. However, the two species behaved differently in terms of throughfall DSD, the effect on diameter volume percentiles, and the width of the drop spectrum. Rain rate also had a substantial effect on different throughfall fractions such as splash, drip and free throughfall. The findings of the study help to better understand the effect of different tree species on the rainfall structure reaching the ground, thus affecting small-scale hydrological and erosion processes.
Lindner	ESERO Germany	Geography is STEM! Augmenting Reality to Convey Physical Geography and Remote Sensing in Class	Geography is considered a subject of the humanities in many curricula. Important basic knowledge about physical geography is given barely any time, nor the methodology to observe and analyse changes in the physical environment. Remote sensing is one of the most important fields of geographical methods as it allows to observe all spheres of the Earth system, directly or indirectly. It also encompasses all STEM subjects, as none of the observations would be possible without knowledge about mathematics, physics or computer science, and its results can be applied to chemistry and biology as well. On top of that, it is ideally suited to visualize large parts of the curricula and many topics in an interesting and, arguably, beautiful way. However, due to the increasing data size of the freely available data, the system requirements of the software to use it, and the time it takes to learn how to use said software, remote sensing is far from being suitable for class. Augmented Reality on a BYOD basis is benefiting from the anywhere, anytime availability of smartphones and has thus become applicable in regular school lessons. In the project KEPLER ISS, it has been explored for earth observation, adding animated time series and videos taken from ISS-borne remote sensing experiments to

			<p>otherwise static images on work sheets. Recently, the first digital experiments were added. Pupils can now follow a typhoon, estimate the surface area of what is left of the Aral Sea, compare light pollution occurrences, experiment with gravity in the earth moon system, and soon analyse an algae bloom with hyperspectral data. The AR apps are created in Unity with the Vuforia extension and provided for free for android devices. The accompanying worksheets are available on the website <a href="http://columbuseye.rub.de/">columbuseye.rub.de/</a></p>
Lindner-Fally	BORG Oberndorf	GI-Learner: Creating a learning line on spatial thinking	<p>Spatial thinking using GIScience tools is integral to everyday life. With the use of online mapping tools, GPS and car navigation the general public has become aware of the possibilities of spatial data. It is the concept of space that makes spatial thinking a distinct form of thinking. It is a basic and essential skill that can and should be learned, alongside other skills like language, mathematics and science.</p> <p>Given the lack of both research in geographical education and practical materials showing how to learn with geomedial in secondary school teaching, GI-Learner created a learning line based on literature and curricula analysis. Moreover, spatial thinking tests and learning materials were created for several age groups in order to support teachers and teacher trainers in their daily business.</p> <p>This paper/presentation is also going to present pupils' and teachers' feedback on process and outcomes of the GI-Learner project.</p>
Maier	University of Cologne	Vive le débat – spatial planning in geography lessons and its contribution to democracy	<p>Debates on land use, conflicts, and subsequent planning proposals are publicly held in democracies around the world. In geography lessons, such discussions can contribute to citizenship education and promote argumentation competence. Anyway, these topics pose great challenges for prospective teachers in particular, especially in times of democracy under pressure.</p> <p>The aim of this presentation is to show the results of a dissertation that examines 1) how spatial planning is treated in geography textbooks, 2) how pupils plan in geography lessons, 3) how geography education students understand spatial planning and draw conclusions from these results. For this purpose, I analysed textbooks from Germany (North Rhine-Westphalia) and England in terms of content, examined transcripts of the argumentation process of pupils' planning in terms of argumentation, and collected and evaluated the views of prospective geography teachers regarding spatial planning with questionnaires.</p> <p>An essential result of the textbook study is that the number of planning tasks in the textbooks examined is limited. An important result of the classroom study is that pupils discuss spatial planning in small groups, but their arguments are rarely complete, facts are missing, and the power is often unequal distributed. An important result of the evaluated questionnaires is that it is challenging for prospective geography teachers to teach on one hand liberty of speech and, on the other hand, handle anti-democratic statements.</p> <p>Based on the results, I derive educational consequences for dealing with spatial planning in class and formulate further research-relevant questions.</p> <p>Reference: Maier, V. (2018): „Das alles und noch viel mehr...“. Cumulative dissertation, Cologne. <a href="https://kups.ub.uni-koeln.de/8461/">https://kups.ub.uni-koeln.de/8461/</a>.</p>

Martínez-Medina	Universidad de Córdoba	Sustainability in Spanish school geography: an analysis of primary education textbooks	The great development of the last decades, especially in developed countries, has led to the emergence of environmental problems that have made essential to promote sustainable development. Proof of this, it is the emphasis placed on Education for Sustainability by the United Nations and the increase of the specific weight of these issues in nationals' educational curricula, as reflected in recent educational reforms, as it has happened in Spain. In this paper it is studied how the Spanish textbooks of Primary Education approach sustainable development, also performing an analysis of the activities related to this concept that are included in them. To carry out the relevant analysis it has been adapted an instrument in which three categories have been established for each textbook 'identification, characterization and how sustainability is treated'. The results suggest that there is no ideal book, and that the suitability would depend on the teacher's criterion.
Masinka	University of Pécs	Segregation and rural slums in Hungary - opportunities to reduce inequalities	Ca. 30 % of the Hungarian population live in rural settlements, so we can not only talk about urban segregates in the country, but also about evolved rural slums. These slums are sometimes units or streets closely linked to settlements, or even separated from the center, and only legally belonging to the main city/village. The farther on they are located, the peripheral situation is growing and the ties are weakening. Currently, there are 482 non-urban settlements (according to the categorization by the law) with 2.8% of the country's population in Hungary in a segregated residential environment. At these places unemployment, illiteracy, social and health problems, and difficult access to services are present simultaneously. The Hungarian government helps the local municipalities to eliminate these inequalities and peripheral life situations, with the involvement of EU funds and complex programs. These projects provide support for the eradication of segregated life situations, improve housing conditions, and reduce marginalization.
Miguel Gonzalez, Koutsopoulos, Schmeinck	University of Zaragoza, EUROGEO, University of Cologne	Key challenges in Geography. EUROGEO Book Series at Springer	In 2017 EUROGEO and SPRINGER signed a contract to launch the book series Key Challenges in Geography. This book series addresses relevant topics in the wide field of geography, which connects the physical, human and technological sciences to enhance teaching, research, and decision-making. Geography provides answers to how aspects of these sciences are interconnected and are forming spatial patterns and processes that have impact on global, regional and local issues and thus affect present and future generations. Moreover, by dealing with places, people and cultures, Geography explores international issues ranging from physical, urban and rural environments and their evolution, to climate, pollution, development and political economy. Key Challenges in Geography is an initiative of the European Association of Geographers (EUROGEO). The book series serves as a platform for members of EUROGEO as well as affiliated National Geographical Associations in Europe, but is equally open to contributions from non-members. The book series addresses topics of contemporary relevance in the wide field of geography. It has a global scope and includes contributions from a wide range of theoretical and applied geographical disciplines. This paper at EUROGEO Conference will explain to attendees the instructions for authors, the publishing process, but also will answer questions about potential proposal titles.
Miguel Gonzalez	University of Zaragoza	Geography education and competences-	The 2006 European Reference Framework "Key Competences for Lifelong Learning" has been one of the most influencing European initiatives in the field of education. It contributed to review National Standards in school



		based curriculum	education and to the development of quality curriculum. This document, as well as the updated 2018 EU Council Recommendation on key competences for lifelong learning, has defined eight key competences. Geographical education –knowledge, skills and attitude- can be related with science competence, digital competence, and social competence. European countries have implemented these competences in the geography school curriculum, but there is still a lack of a definition of proper geographical key competences, as they exist in other subjects as mathematics or native language. This paper analyses the most recent contributions - from geography education theory-, which demonstrate the importance of geography in the school curriculum and for life. Several key competences in geography education will be defined -spatial thinking, spatial citizenship and geospatial enquiry- in order to acquire different cognitive processes, to obtain a meaningful geographical knowledge and to update geographical learning of the contemporary world. These competences will be applied and explained through a case study from a curricular project in Spain.
Mora	Communications & Systèmes	The RUS Service: supporting Sentinel users with free resources.	<p>The Research and User Support for Sentinel core products (RUS) Service, in operation since October 2017, was implemented to promote the uptake and support the scaling up of R&amp;D activities, with Copernicus data. Earth Observation is a major contributor for the Geography and GIS community and the Copernicus satellites constellation is a game-changer for many different applications, including cartography at 1:25 000 or larger scale. The RUS Service is configured in a scalable cloud environment that offers the possibility to remotely store, access and process EO data. It offers support and assistance from a helpdesk and a team of EO and IT experts who can address any request, coming from beginners or skilled practitioners. Cloud ICT resources are procured with Free and Open-Source Software and are tailored to the user's needs. The RUS service also provides on-site training sessions, webinars, and online materials offering capacity building. It is delivered at no cost to the citizens of the contributors to the Copernicus programme and it is available for a large community of users and types of institutional organizations.</p> <p>The objectives of this oral presentation are 1) to introduce the different aspects of the Copernicus RUS service, 2) to highlight how the RUS service facilitates the handling of Earth observation data in the context of the European open data access policy, and 3) to demonstrate how the RUS service has been used to support training activities on the use of geographic data and information.</p> <p>The RUS Service is funded by the EC, managed by ESA and operated by Communications &amp; Systèmes – Systèmes d'Informations (CS SI) and its partners: Serco Italia SPA, Noveltis, Along-Track and CS Romania.</p>
Nurković	University in Sarajevo, Faculty of Science, Department of Geography	STEM Education in teaching Geography in Bosnia and Herzegovina	STEM education plays a significant role in development of reasoning and technical skills, besides the other benefits in the USA. The aim of this paper is to support the change of STEM education politics in Bosnia and Herzegovina within the education programmes. Geography relates to STEM disciplines through the application of geography tools for problem solving. Geography strongly connects STEM (science, technology, engineering, and mathematics) disciplines using geographic technology/tools that may offer better understanding of inter-disciplinary occurrences for solving important problems. However, geography is somewhat seen as a STEM field by the state authorities in the USA (Dangermond, 2013). With an aim to offer a holistic image of higher



			<p>geographic education relating to STEM, authors in the USA have collected information about types of geographic education programmes that offer better education in the American colleges and universities. The results of this research in Bosnia and Herzegovina will be supported by the USA government in the sense of changes in politics, and it will support the benefits to education based on the economics of knowledge of geography programmes, as well as other disciplines. This process could be modeled onto other countries that have chosen to participate in the development of STEM disciplines. Within the research, an overview of basic indicators and trends in STEM education was given, as well as an evaluation of quality of the education system in Bosnia and Herzegovina. In this paper, conduction of the primary research is planned and it will include questionnaires and semi-structured interviews with the population and persons responsible for scientific innovations in education.</p> <p>Keywords: STEM, geography major, science, geographic education</p>
O'Reilly	Dublin City University	Facing Challenges: Aligning Geography, Geopolitics and Humanitarian Action	<p>Confronting the defines of sustainability, development and ever-growing socio-political malaise and violence being witnessed in many societies inside and beyond Europe is part of the geographer's remit. A major responsibility is access to, and reflective responsible use of geographical information regarding conflict. In this paper, concepts and problems assessed were based on frequently asked questions and discussions had with students taking courses in geography, humanitarian action, geopolitics and associated disciplines since 1998, and equally with practitioners in the field. Questions were categorized into thematic groups. Analytical answers were enhanced with digital data, from sources including the UN Development Program, OCHA – UN Office for the Coordination of Humanitarian Affairs, ECHO (European Commission Humanitarian Aid) and NGOs. Results are being published in Aligning Geopolitics, Humanitarian Action and Geography in Times of Conflict (Springer, 2019). This aims to encourage reflection on geography and humanitarian challenges and responses, enhancing holistic perspectives planning for greater applied action. Core ideas presented appraise the nexus between geography, humanitarian action, development and geopolitics: (i) conflict and power, (ii) humanitarianism, risk and vulnerability, and (iii) role of international organizations, alongside globalization and quest for regulation including the UN Responsibility to Protect. Attempts at greater international regulation and action to prevent violence, and enhance responses to emergencies need to be reinforced as witnessed in Syria (2011 on) and consequences for the MENA region and Europe. Further research is targeting digital citizenship that can build on the above work.</p>
O'Reilly	Dublin City University	Geographical Perspectives: Spaces of Memory - Memorialization and Democratization	<p>Spaces of memory are appraised from geographical perspectives and their place in democratization and citizenship. Interpretations from various standpoints include the geopolitics of memory and emotions. Research in geography and education must respond, empowering citizens to create sustainable futures. Now, memorialization contributes to wider inclusive interpretations of history, heritage, tourism and human rights. "In the past, ... there was one national history and ... many particular memories. Today, ... its unity stems from a divided patrimonial demand that is constantly expanding ... in search of coherence" (Pierre Nora, Les Lieux de Mémoire). The European Project embraces this challenge, with its geographies in places of memories that can foster cooperation as witnessed throughout Europe e.g. Ireland's Decade of Centenaries (2012-22) including ceremonial usage of the symbolic Glasnevin Cemetery Dublin. Nonetheless, 'the peace' cannot be taken for granted with insecurities,</p>

			<p>globalization, and nationalistic reactions in the USA; UK's Brexit stress and populist movements in Europe - France, Netherlands, Greece, Visegrád and Balkan countries. Citizen-fatigue is reflected in socio-political malaise and violence mirrored in the Yellow Vest movement. Empathy with other peoples' places and narratives can assist citizens learn from the past. Memory sites promoted by the EU, COE and UNESCO may tend to homogenize diverse local memories. Nonetheless, they act as vectors in memorialization, re-evaluating once monolithic narratives. "The purpose of all interpretation is to conquer remoteness, a distance between the past cultural epoch to which the text belongs and the interpreter himself" (Ricoeur, 1978).</p>
Péterfi	University of Pécs	Castle Utilization in tourism and settlement development – primary impact assessment of Somogy County's castle hotels	<p>In Hungary, there are a large number of built heritages. Of these, this current research focuses on the castles. Nowadays castles can be filled with many functions, such as schools, common lodging houses, hospitals or residential buildings. The most optimal form of use is tourism utilization, such as museums, hotels, event venues. Thus, the current research aims to present and evaluate the form of utilization of castles in which hotels are operated. The aim of the research is to conduct an assessment of the interest of local residents, local leaders and castle-owners. The research focuses on the advantages and disadvantages of the castle hotels in the life of the settlements. The case studies are being conducted in Somogy County, where several castle hotels are located. Interviewing and field surveying, as well as residential questionnaires, are essential research methods. In the end, the research will emphasize a co-operation that can be indispensable for utilizing the castles as hotels in such a way that all of the stakeholders can be satisfied.</p>
Robinson	University of Adelaide	Using games in geographical teaching: Computers, boards and role-play	<p>This paper outlines the evolution of games used in the teaching of Geography from the 1960s, including the introduction of computer-based variants and the development of popular computer-based games for a general audience, like SimCity. It examines the lessons learned from evaluation of geographical games and discusses the utility of two recently developed non-computer-based games in the UK and Belgium. There is special consideration of the role that the wide range of serious games now available can play within the curriculum. Games have long been used as vehicles for teaching Geography, from primary schools to the higher education sector, often in exercises simulating the world beyond the classroom and asking students to engage in role play. They are aimed at generating a range of perceptual, cognitive, behavioural, affective and motivational impacts and outcomes, especially knowledge acquisition, content understanding and affective and motivational outcomes.</p> <p>There has been a blurring of the boundary between serious games (designed for a primary purpose other than pure entertainment) and ones designed primarily for entertainment. Hence for millions of people who enjoy playing computer games, city-building in SimCity and Cities: Skylines offers a compelling initial introduction to the world of urban planning and development. Like games designed for use specifically within a Geography curriculum, they offer an attractive combination of enjoyment and education. The educational component may be incidental in games designed for the general public, but in serious or critical games for the classroom the enjoyment can be a significant enhancement to the learning experience.</p> <p>The two featured games discussed in the paper are Participology, a board game designed to aid understanding of</p>

			<p>planning issues and decisions, which has been adopted in several European countries, Australia and the United States, and an exercise to construct the ideal Belgian village using a set of building blocks. This latter example also focuses on the complexities of planning, enabling students to gain greater understanding of the factors affecting planning decisions.</p>
Mitkevich-Dalechis	RUDN University	Aspects of Cartographic Materials Use in Teaching World Industry Development Trends at Universities	<p>Today's society faces new challenges, which require a modern way of geographical thinking by millions of economists, managers, businessmen, journalists, politicians, etc. Universities can only graduate highly qualified experts using a wide range of teaching tools, approaches and methods, including graphic representations, GIS and maps.</p> <p>The paper provides original cartographic expressions based on a worldwide rating of industrial development of countries made by the author. The ranking depends on three groups of characteristics, which are the general level of country's development, the level of the development of manufacturing sector and the structure of industrial goods export.</p> <p>The aim of the paper is to show that cartographic materials, based on these rating tables, are crucial to use as one of the tools for analyzing the present state of the world industry, detecting troubles while developing the industrial policy of a country longing for a stable economic growth. The authors are sure that maps are the clearest and the easiest way to inform students about the results of the research paper showing global trends in world industry development. The basic assumption is that experiences gained in one country will be of real interest to educators in another.</p>
Mitkevich-Dalechis	RUDN University	Methods of collecting and analyzing statistics on cross-country energy export and import	<p>The purpose of the article is to characterize the features of the collection and analysis of statistics on the development of world energy in university teaching. There are many sources of information about the state of energy in the countries of the world. Our task is to acquaint students with these sources. In some countries, energy is scarce and they are forced to import it. Other countries produce more energy than they consume and they export it. So there are export-import operations investigated in this article. An analysis of the export-import operation showed that the capacities of oil refineries in developed countries, which have a lack of energy resources, exceed the needs of the domestic market. Part of imported energy is processed in developed countries and re-exported. The problem of the development of alternative energy, which is rapidly developing in different countries of the world, is closely related to these issues. Among the factors affecting the development of alternative energy are the change in the price of oil and other types of fuel, the problems of the energy security of countries with a shortage of energy and the problems of climate change on the planet.</p>
Sadoń-Osowiecka	University of Gdańsk	To better understanding the world - a value humanistic approach to school geography	<p>Sometimes humanistic geography is seen as naive and emotional only without cognitive value at ordinary Polish school reality. Only objectivistic approach is presented at school geography. The author shows humanistic approach as deeper and relativistic understanding problems of our contemporary world. But we must know facts about the world to understand it. This paper presents some examples how humanistic approach can use "objective" geography to constructing valuable geographical knowledge.</p>
Schauss	Geography	Epistemological	<p>According to the educational standards for geography is to address geographically and geoscientifically relevant</p>

	Education	<p>beliefs in climate change education – initial evaluation of a school project</p>	<p>phenomena and processes, such as climate change [...] (German Geographical Society, 2012). A cooperation between climate research and schools, the "School Project Climate Change", ties in with this point and promotes the discussion of climate-relevant questions.</p> <p>Highschool students work for four to five month on a global warming relevant subject and get support from meteorology students and scientists. They use authentic modeled climate data, prepare a presentation and a scientific essay and present their research to other students. They are also allowed to join scientific lectures and stay in touch with the scientists. The aim of this study is an initial evaluation of the school project and focus the epistemologic beliefs in global warming.</p> <p>As stated by Mayer (2007) the understanding of science (epistemological beliefs) is a competence construct of the natural sciences and a good starting point for understanding how to deal with science-based knowledge in formal learning contexts (e.g. school and university).</p> <p>Epistemological beliefs, which are the focus of this work, can be clustered into two areas: the nature of knowledge, including the dimension certainty of knowledge and complexity of knowledge and the nature of knowing, including the dimension source of knowledge and justification of knowledge (Hofer, 2001). Scientifically appropriate epistemological beliefs are also a core component of basic scientific education; by pre-structuring the perceived contents, they influence learning (Urhahne, Kremer, &amp; Mayer, 2011).</p> <p>The study will be conducted in a pre-post design. The instrument for understanding science has been compiled, modified and piloted on the basis of already published and validated questionnaires, four of the six scales represent the dimension of the epistemological beliefs. Following the posttest using the questionnaire, guided interviews are conducted and recorded with two groups of students per course. The intention is to encourage the students to enter into conversation and discussion with the group. Uncertainties, misconceptions, but also good and complex thoughts of the students become clearer than with closed answer formats, as they are used in the questionnaire. The evaluation takes place after the qualitative content analysis according to Kuckartz with deductive-inductive category formation (Kuckartz, 2014).</p> <p>First results of the initial evaluation will be presented at the conference.</p> <p>Literature</p> <p>German Geographical Society. (2012). Educational Standards in Geography for the Intermediate School Certificate with sample assignments: Selbstverlag Deutsche Gesellschaft für Geographie (DGfG) Bonn.</p> <p>Hofer, B. K. (2001). Personal epistemology research: Implications for learning and teaching. Educational Psychology Review, 13(4), 353-383.</p> <p>Kuckartz, U. (2014). Qualitative text analysis: A guide to methods, practice and using software. Sage.</p> <p>Mayer, J. (2007). Erkenntnisgewinnung als wissenschaftliches Problemlösen. Theorien in der biologiedidaktischen Forschung, 177-186.</p> <p>Urhahne, D., Kremer, K., &amp; Mayer, J. (2011). Conceptions of the nature of science—are they general or context specific? International Journal of Science and Mathematics Education, 9(3), 707-730.</p>
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Scholten	Universität Hamburg	Geography Teacher Noticing during Instruction - Experts' Interpretation and Decision-Making	<p>During instruction teachers are exposed to multiple stimuli. They manage this complex environment by noticing relevant aspects while disregarding others. Presumably, teachers' noticing has an impact on their performance in the classroom which eventually leads to student learning gains.</p> <p>Blömeke, Gustafsson and Shavelson's (2015) model of teacher competence emphasizes the importance of teacher noticing. In their model they include teachers' situation-specific skills which they specify as: perception, interpretation and decision-making. In mathematics education a similar concept is discussed, namely "noticing" (Schack, Fisher &amp; Wilhelm, 2017; Sherin, Jacobs &amp; Philipp, 2011).</p> <p>From a geographic perspective there is little research on this competence facet. The aim of this research project is to explore the differences between expert and novice geography teachers' noticing in the geography classroom. A qualitative study in an expert-novice research design was conducted. Two staged video vignettes of geography instruction were produced. The participants were asked to stop the video whenever they notice something, which is relevant for subject-specific learning, to elaborate why they stopped and to explain how they would proceed as a teacher. The answers are analyzed by qualitative content analysis (Kuckartz, 2012). The results will be finalized until the conference.</p> <p>LITERATURE</p> <p>Blömeke, S., Gustafsson, J.-E. &amp; Shavelson, R. J. (2015). Beyond Dichotomies: Competence Viewed as a Continuum. <i>Zeitschrift für Psychologie</i>, 223(1), 3-13.</p> <p>Kuckartz, U. (2012). <i>Qualitative Inhaltsanalyse. Methoden, Praxis, Computerunterstützung</i>. Weinheim: Beltz Juventa.</p> <p>Schack, E. O., Fisher, M. H. &amp; Wilhelm, J. A. (2017). <i>Teacher noticing: Bridging and broadening perspectives, contexts, and frameworks</i>: Springer.</p> <p>Sherin, M. G., Jacobs, V. R. &amp; Philipp, R. A. (Hrsg.). (2011). <i>Mathematics teacher noticing: Seeing through teachers' eyes</i>. New York: Routledge.</p>
Seidel	Institute for Geography Education, University of Cologne	Experiencing political-geographical concepts in everyday life: pupils and their border experiences and concepts while playing video games	<p>In Germany, 93 percent of children and youths between the ages of 10 and 18 play video games on a daily basis. Digital games are for entertainment and relaxation, they train reactions and take you into fantastic worlds, simulate cities or even whole worlds. Digital games are by no means pure entertainment media. Political geography and especially popular geopolitics show that video games establish and negotiate geopolitical meanings. This presentation examines the geopolitical models and experiences of playing video games. In times in which geopolitical developments fill the news, a contemporary geographic education must counteract possible misconceptions formed through digital games and support pupils in reflecting and evaluating their experiences and actions. As we have shown in earlier studies (cf. Seidel &amp; Budke 2018), pupils have many misconceptions about boundaries, which may also result from the representation of boundaries in digital games. In contrast, however, pupils should be able to look at boundaries from different spatial concepts and also be able to explain constructivist border concepts (cf. Seidel &amp; Budke 2017). Within the framework of this project, the analysis focuses on the representation of territories and borders, the spatial concepts and conflicts associated with them.</p>

			In particular, strategy digital games were examined due to the fact that this genre has its main focus on conquering territories, controlling the resulting space and tactically plan further moves e.g. signing trade contracts with or declaring war. This research consisted of two steps. First, exemplary digital games were examined regarding their representation of territories and borders. The representations were categorized and thus formed the foundation for interviews and observations. Based on the categorized evaluation criteria pupils were then observed playing the chosen digital games and interviewed afterwards. The results will present an outlook on how and what pupils experience playing said games and which conceptions they transfer to everyday geopolitical practice and adopt into their own imaginations.
Sidorov	California State University Long Beach	Online geography courses: learning the students	This paper attempts to summarize my experience of teaching in California several online geography courses with regard to some challenges and opportunities it provides for learning the courses' audiences. Unlike in analog classes, online students remain mostly invisible, yet their individual behavior and collective performance online become more transparent.
Solem	Texas State University	Trends in International Geography Assessment Study: Methodology	This paper will present the TIGAS research methodology, activities, and key benchmarks planned over the next several years, culminating with the potential introduction of international geography assessments in 2023 (coinciding with TIMSS). Specific information will be shared regarding development of the TIGAS assessment framework, prototype assessment item development, and validation studies in multiple international field trials.
Solem	Texas State University	Powerful Geography	Powerful Geography is a multi-year research effort to inform the next generation of national and state standards for K-12 geography education. There are four components to this research: 1. The first research component will be an exploratory analysis of restricted-use NAEP Geography data (1994, 2001, 2010, 2014) for elementary, middle, and high school students. Variance in student proficiency in geography will be analyzed in relation to student background characteristics, school-level contextual attributes, and classroom opportunity to learn (OTL) factors. 2. The second research component will define and measure the societal value of geography through a quantitative and qualitative analysis of the work and civic engagements of professionals with backgrounds in different areas of geography. Interview, survey, and work log data will be analyzed to identify substantive, conceptual, and procedural geographic knowledge applied in different professional and personal contexts. 3. The third research component will focus on gathering data on student capabilities and aspirations. Co-investigators from the six participating states will develop state samples and facilitate surveys and interviews with elementary and secondary school teachers and students. The surveys and interviews will be designed to obtain age-appropriate information about students' capabilities for school success, what students aspire to be and to do, their goals and concerns, and their relative interest in various social and environmental issues. 4. The fourth research component will determine what geography subject matter to recommend as the basis of future standards. A series of research workshops will convene geographers, teachers, teacher educators, education researchers, and curriculum writers in the six states to review their state datasets and identify the subject matter that a) students presently do not understand, b) is relevant for the capabilities and aspirations of students of

			diverse backgrounds, and c) is important for work, civic engagement, the environment, and society.
Spevec, Vuk	University of Zagreb, Faculty of Science, Department of Geography	Does geography education in Croatia responds to needs of contemporary society?	<p>Today Croatian society is facing many challenges – on local, national and global level. Questions related to organization and space management, inclusive and sustainable resources management – especially of drinking water, uneven regional development, advanced depopulation and population aging, solving border issues, contemporary migration, climate change and many other questions reflect on everyday life of people, especially younger population, but also on Croatian society as a whole. In order to be able to make decisions, young people must be informed and educated how to use accessible geographical data, avoiding possible manipulations that they are exposed to in the era of advanced technological development and overall accessibility of verified and unverified (geographical) information.</p> <p>One of the most important questions in the Croatian society nowadays is how to plan and carry out education in challenging times. Geographical education, that should offer young people relevant answers on many questions concerning contemporary development, contribute to their role of responsible citizens, and prepare them for challenges in both personal and professional growth in 21st century, has a very important role.</p> <p>The national curriculum of geography does answer the needs of contemporary society and world around us, most of all during 3rd and 4th year of grammar school education, providing young people answers on earlier mentioned questions. The key learning outcomes that provide it include topics on demographic (un)sustainability, climate change, activities of international community in resolving problems of global warming, contemporary changes in urban settlements and its surrounding areas, sustainable management of sea and sea bed resources, impact of mega-projects on environment, influence of globalization on national identity and sovereignty, geopolitical, economic and cultural-civilizational aspects of world division, places where to spend free time, influence of natural-geographical and socio-geographical factors on appearance and spread of diseases and health quality, significance of state borders in contemporary world and uneven food accessibility. All learning outcomes in national curriculum of geography are achieved based on examples from Croatia and world. The learning outcomes in the 3rd year of grammar school education give answers to questions of sustainability, and in the 4th year of grammar school education they contribute to students' awareness of the importance of identity in globalized society and provide use of geographical literacy, communication and social skills for critical analysis of spatial problems in order to identify creative and innovative solutions in everyday life and for lifelong learning. So far numerous researches have confirmed overall dissatisfaction with former geographical education in Croatia, so expectations are big. Will new geography curriculum in Croatia fulfill expectations? The answers will be provided by continuous observation and evaluation of new curriculum implementation, and also by longitudinal study and research of geographical education.</p> <p>Key words: geographical literacy, geographical education, geography curriculum, Croatia</p>
Steegeen	KU Leuven	Fostering students geographic systems thinking by enriching	Nowadays challenges for society are global. These challenges are very complex and are systems of several highly interrelated causes and consequences. Insight in the underlying structure of these systems is crucial to think of possible solutions for many of these challenges. Moreover, from a geographical perspective, a spatial component



		causal diagrams with scale	is inherent to these challenges, often contributing to the complexity. In this study causal diagrams visualizing a system, were enriched with scale. These enriched diagrams were taught to students in their last years of secondary education. Results of the post-test show that these students achieve a higher level of geographical thinking and that they actively use the scale-component while processing information. (Steegeen An, Marjolein Cox & Elen Jan)
Stoltman	Western Michigan University/Independent Scholar	Trends in International Geography Assessment Study (TIGAS): Building a Consensus	Assessment of student learning is subject to numerous perspectives and values. Developing an international assessment presents numerous challenges. One of those challenges is in reaching a consensus among the experts contributing to the selection of concepts and content for an international assessment in geography. The development of TIGAS has proceeded in a series of steps over the past several years to build a consensus. The paper will review the process, the steps, and a summary of feedback that has been received from the international community of geography educators.
Sümeghy	University of Pécs	Social cohesion and the radical right in Skåne	Nowadays social and economic problems are causing populist far-right parties to emerge all across Europe. One of the most important challenges is to manage migration and growing diversity. Cultural differences and radicalism are two phenomena that, in general, reduce the individual's faith and trust in the community and thus weaken social cohesion. In Sweden, the far-right Sweden Democrats are the third most important party in the country. Their main voter base is in Skåne County since the foundation of the movement. I will analyze three election years (2006, 2010, 2014) and 2016, using surveys from the University of Gothenburg, "The Regional Skåne SOM Survey", the election results database, settlement-level ethnic data, and other socio-economic indicators. With regression, I analyze how the social capital is influenced by ethnic diversity and its change, the strength of the far right and its change (as dependent variables), and the differences between social cohesion in the various settlements in space and time.
Tamagno	North West Region, RGS	Geography Teachers and Gaia: Shock troops of conservation or harbingers of gloom?	Global news organizations, UN agencies, peak lobby groups, social media and on-line blogs constantly publish and broadcast articles and reports which examine the interaction of people and place around the world. In particular, streams of knowledge describe the impact of human activity on the functioning of the global ecosystem and the pressing need to implement restorative responses at the international and global scale (fossil fuels, plastic, sea level rise). Humankind is more aware than at any time in its history that its presence is adversely affecting natural systems and that a crucially pressing time-line demands the need to implement strategies aimed at adaptation and mitigation (weather events, habitat destruction, water scarcity). And yet, we seem to be sleepwalking into a series of major ecological disasters. Governments and management agencies across the globe show little urgency in pursuing mandatory and effective policies to regulate the damaging effects of human activity. This presentation considers the role of geography curricula in the wider context of contributing knowledge and understanding to this issue. It conducts an analysis of a representative, state-wide Geography course of study from the final years of schooling (Victorian Certificate of Education, Australia). It concludes that students, teachers (and parents?) are presented with an extensive and adequate knowledge basis to be effectively informed about the future functioning of planet Earth. As noted by Casinader (2018), "... this highlights the



			<p>engagement of students in the geographical exploration of transformational knowledge, founded on higher orders of thinking skills, in ways that develop their ability to understand, critique and then influence societal structures."</p> <p>High school graduates finish their schooling equipped with the necessary awareness and knowledge to constructively contribute to the wider debate about citizens' responsibility and government policy. Yet, a gulf exists between Knowledge and Implementation. "Research indicates that students do not develop good arguments, in either geography or science, simply by being taught content knowledge. Students need to be provided with opportunities to engage in discussion" (Roberts, 2018). However, most students – and indeed, the citizenry at large – are compelled to concentrate on their own life choices and career development as well as the challenges of political involvement and pathways to influencing government policy. Seow (2017) suggests that "an apolitical curriculum focused largely on the provision of scientific knowledge is inadequate in developing students' awareness of the social, economic and political complexities of (climate change), and in preparing youths to act as knowledgeable and empowered environmental citizens".</p> <p>Can geography curricula be modified to encourage students to become involved in the pathway to implementation? Should geographical education at senior levels incorporate a shift in emphasis from the pedagogical to the political domain? Would this be sufficient to transform subject knowledge into understanding and commitment to participation? This is not to advocate violent protest, civil disobedience or sabotage but rather to promote an awareness of pathways to participate in society's decision-making spectrum - local planning initiatives, membership of NGOs and advocacy groups, charities and fund raising, political party membership. Teachers would continue to operate within the ethical bounds of the three pillars of geographical education (knowledge, sustainability, citizenship). Learning outcomes could specify pathways to a decision-making chain, eg. awareness-opinion-advocacy-activism-administration-policy formulation. Students engaging in a positive role based on geographical understanding can participate effectively and avoid the pitfalls of negative prediction and scenarios of gloom.</p> <p>This would enable Geography teachers and students to develop a radical critique which maintains an audit of public policy not dissimilar to the role of tenacious, investigative journalists. As the editor of The Guardian newspaper observed, "The 'unimaginable horrors' of unchecked warming and habitat destruction mean more radical tactics are called for... it is not rational to deny that (activists) are justified in rebelling against government inaction. Their sense of urgency is welcome" (5 November, 2018). This urgency was underlined by the IPCC Report, "SR15" (2018) which stated that if the current pace of global warming continues, then the preferred goal of limiting it to an increase of 1.5°C will be reached around 2040.</p> <p>Achieving this goal requires a massive raft of adaptive and mitigation responses to be implemented and intensified globally over the next 20 years. "We need a global community consisting of individuals with the necessary understanding of the Earth's large-scale problems ... Education is essential to create such a community. Geography, better than any other discipline, can explore the spatial relationships of social and physical</p>
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			<p>phenomena at diverse scales and suggest solutions to significant and persistent problems” (Bednarz, 2017). Students completing VCE Geography are required to investigate and comment on two global issues: Changes to the Land and Human Population – trends and Issues. They are to required to exhibit higher order thinking skills to “assess” and “evaluate” the nature of those issues and the effectiveness of government responses. This involves other higher order thinking skills including “prediction”, “synthesis” and “inference”. These skills can then be used to consider the effect of the global issues at a local scale and enable students to develop realistic proposals aimed at influencing decision makers. This approach can be incorporated into the relevant assessment regime including policy analysis and fieldwork reports.</p> <p>Key words Natural system, human impact, environmental policy, agency response, implementation, discipline knowledge, understanding, critique, participation.</p> <p>References Harari, N H: Sapiens, a Brief History of Humankind (Vintage, 2014 trans.) Intergovernmental Panel on Climate Change: Special Report on Global Warming of 1.5 C° (SR15, 2018), p.81 Lovelock, J: Gaia: A new look at life on Earth (Oxford, 2000) A selection of recent articles from “Abstracts, CGE Lisbon Symposium 2017” Bednarz, S: Geography education for global understanding. A Summary of Ideas Casinader, N: Geography, Transculturalism and Disciplinary Renewal. A new paradigm for cultural education in a globalised society Roberts, M: How does geography justify the claims it makes about the world? Developing well-(SR15evidenced arguments in geography Seow, T: Climate change education for environmental citizenship: is Singapore up to task?</p>
Vávra	Technical University of Liberec	Teaching and learning geography through the concept of place, Liberec approach, Czechia	<p>Geographical knowledge and skills in Liberec approach are based on relative stable and steady professional/scientific knowledge and methods, which are useful for a pupil (as well as for a teacher) to reach geographical knowledge and skills, while attitudes and values are personal/subjective. The approach is based on individual and shared experience, that develop and they are less stable/steady and they are strong dependent upon environment (physical/human) where a pupil as well as a teacher is learning/teaching (family, school, community, and others),</p> <p>The Liberec approach does not support memorizing knowledge ('the traditional rote learning of 'capes and bays'). It is important to internalize geographical knowledge and skills which are for a pupil important in formal as well as in informal education. Values and attitudes are important to develop (e.g. citizenship and environmental education). The approach use a structural approach as well as a meaning one.</p>
Vyslůžilová	Dell, Department of Global	New Paradigm of the European Urban Area due to Economic	<p>In this paper, we are focusing on the role of urban structures in Europe in which we try to point out what influence possess rapid growing significance of technological information on a global scale. Economic globalization declare the increasing interdependence of world economies and is largely based on the accelerated</p>

	Business Services	Globalization and Technological Revolution	<p>development of science and information technologies. Therein, IT development is investigated as a strong technological driving force for economic globalization and reduction of global connection barriers. The conceptual bases for the development of strategic global cities in international trade are examined. The impact of technology on transformation of modern society are examined as well. The application of modern mechanisms of innovative development of the economy is justified. Nevertheless, process can pose certain risks and have some limitations. Preconditions for the urban development of national economies in European urban areas are highlighted. Its main conclusion is that the transition to modern and economically connected European urban areas can lead to new era supported by a technological revolution.</p> <p>Keywords: Economic Globalization, Urban Area, Global City, Informational City, Technological Revolution</p>
Yaar	Oranim Academic College for Education	Bordering on the impossible: Teaching (geographical) boundaries in the Israeli education system	<p>Teaching Geopolitics at all, especially Borders subjects, is a challenging matter. Although teachers know very well the importance of the relevance of the content to the learner, they avoid or fear teaching controversial or unclear topics. Teaching Geopolitics in Israel is there for, even more challenging.</p> <p>Not all the borders of the State of Israel are agreed. Some of them are cease-fire borders, and in some cases there is internal political disagreement and disagreements between the United Nations and the state. Teaching the subject of borders, from the beginning is very problematic and ranges from a historical description of the formation of borders to the presentation of the complex reality on the ground. Teachers fear to promote a real and deep discussion of the reality of the borders in Israel, and the material taught in the classroom is sometimes "sterile" and in the worst case, not studied at all.</p> <p>The curricula written by the Ministry of Education at this subject also does not lead to Inquisitive thinking, does not lead the student to understand the complexity of the existence of boundaries, and hardly express the value questions associated with them. How do we educate thinking citizens involved in a democratic state when teaching does not lead to the skills required of a citizen in a free democratic state?</p>
YAGASAKI	University of Tsukuba	The Role of School District in the Reconstruction Process of Coastal Communities after the Great East Japan Earthquake: A Case Study of Urashima of Kesennuma City, Miyagi Prefecture, Japan	<p>After experiencing devastative damages by the Great East Japan Earthquake in March 2011, those who lost houses began to recover their everyday life by relocating houses from the coastal lowland to the high ground for the purpose of disaster prevention. While the social capital played an important role in facilitating the process of reconstruction by implementing group relocation projects, the traditional community has been modified due to depopulation and to the reorganization of community structure. This study examines the Urashima area of Kesennuma City, Miyagi Prefecture, as the coastal community was seriously damaged by tsunami. Although the four settlements of Urashima had cohesive community structure with four independent neighborhood associations, an unified school district was maintained where all the children in Urashima went to the Urashima Elementary School until the closing of the school in 2013. Facing a population decrease and a weakening role of traditional neighborhood associations, residents in the four settlements came to be united under the Urashima Promotion Association. Being a symbol of reorganized community of Urashima, the new organization, headquartered in the old school building of the Urashima Elementary School, plays a pivotal role in uniting the residents in a larger regional scale and hosting local events and community activities. Thus, in the reconstruction</p>

			process of tsunami damaged communities, social relations formed on the basis of local primary school contributed to bring about a new community structure.
YOON	Cheongju National University of Education	Teaching methodologies for a population unit in US APHG class	This research was designed to examine various teaching methods used in the population unit of the US Advanced Placement Human Geography course. The research is based on observations made from May to November 2017 in high school classrooms in the US states of Illinois, Kentucky, North Carolina, and Virginia. In APHG classrooms, there were various resources, media, and devices used. The collected data include teacher's lectures, activity guides, teacher led discussion records, in class activities and notated interactions among students in classes.
YOON, Jo	Cheongju National University of Education	National Assessment of Educational Achievement (NAEA) of South Korea (Okkyong Yoon, Injeong Jo - co presentation)	In Korea, the National Assessment of Educational Achievement (NAEA) of core subjects administered by the Korea Institute of Curriculum and Evaluation (KICE) every year. According to the KICE report, 6,646 students in the junior high school were sampled in June 2017. Overall academic achievement is assessed by the students' score and achievement level. The information about students' understanding, performance, and misconceptions related to the attainment are collected through the analysis of items.
Zwartjes	Ghent University Geography Department	SEED: Smart Entrepreneurial Education and training in Digital farming	<p>The SEED project aims to:</p> <ul style="list-style-type: none"> <li>• increase the employability of young people, by supporting the development of a highly skilled, qualified and mobile workforce, also thanks to transnational placement;</li> <li>• support the development of a joint VET qualification at the EU level;</li> <li>• promote work-based learning, supported by a mobility component.</li> </ul> <p>The main outputs from the project will be:</p> <ol style="list-style-type: none"> <li>1) the definition of a qualification profile based on modular units of LOs to create a new qualification or to review an already existing qualification;</li> <li>2) a curriculum in digital farming;</li> <li>3) the elaboration of assessment standards.</li> </ol> <p>The SEED project will develop a new qualification profile: Expert in Digital Farming. The profile will be developed starting from existing curricula and define a profile transversal to all the professional qualifications identified. The learning outcomes (LOs) and, more specifically units of LOs will be identified and validated by the VET Centres participating in the consortium, taking into account the transversal nature of the subjects involved. Developing a joint curriculum in digital farming will focus not only on digital innovation in the agricultural sector, but also integrate the capability to embrace new entrepreneurial opportunities in the labour market. The project will support the development of a Joint VET Qualification (EQF 5) on digital farming. Skills developed will be mapped against the EntreCOMP (link) and DigCOMP (link) frameworks. Work-based learning (link) will be the main feature of the project.</p>
Zwartjes	Ghent University	MyGeo: fostering the employability of	The project ultimately aims at fostering the employability of students in higher education through promoting the acquisition of key skills related to the use of Geographic Information Systems (GIS) tools. To this aim, the partner

	Geography Department	students in higher education through promoting the acquisition of key skills related to the use GIS-tools	<p>organizations will undertake an initial activity of research finalized at identifying GIS-related key skills widely required by the job market. In line with the outcomes of the research the project partner will implement two different Intellectual Outputs:</p> <ul style="list-style-type: none"> <li>- One MOOC for teachers in Higher Education Institutions: aimed at fostering the acquisition of key skills related to the use of GIS for teaching purposes. This Intellectual Output will ultimately lead to the MODERNIZATION of the partner Universities.</li> <li>- The "PORTFOLIO MY GEO " for students: including a list of key skills and GIS tools widely used by private companies in different sectors. Each skill and tool will be linked to a training session provided in MOOC modality: those will be targeted to students and will contribute to raise their skills in making use of the listed tools. This Intellectual Output is ultimately aimed at fostering the OCCUPABILITY of students in higher education.</li> </ul> <p>Finally, the project partner will organize two rounds for the international mobility of students from each partner University to each partner company. The mobility will be aimed at further empowering the participants on the use of GIS tools, through work-based learning experiences. In this sense, the project will foster the INTERNATIONALIZATION of partner organizations.</p> <p>The results of the mobilities will be collected and displayed on the project platform, as all the other intellectual outputs previously described. The platform will be an interactive tool collecting and organizing all the project outputs for their dissemination. A session of the platform will allow the interaction among stakeholders active in the field of e-education: fostering the exchange of experiences, good practices and lessons learned, and ultimately contributing to the construction of an European "Community of practices" including stakeholders promoting the use of GIS tools for teaching/learning purposes.</p>
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## 6 Workshops

EUROCRAFT: Discussions about Critical heritage using serious game-based learning	<p>Modern educational reality is required to adapt to information, knowledge and guidelines dictated by the new political, economic and social components of United Europe. The pluralism of ideas, languages and types of communication, the facilitation of the educational process with new technologies and the enrichment of educational objectives with human and cultural values, are some of the demands of modern education. The resolution of current problems that Europe faces (questioning values, massive flows of immigrants, economic crisis, etc.) requires an educational approach intimately involved with issues related to the study, preservation and promotion of cultural heritage, as well as the development of in-depth dialogues about the "difficult past" and "difficult present" of Europe.</p> <p>This workshop will feature "Eurocraft", a serious game created within the framework of the CoHERE project (funded by EU/Horizon 2020 under the G.A. No 693289), to critically approach and develop a critical dialogue on cultural heritage. "Serious" games are enjoyable games designed for educational purposes and the training of students. They usually are simulations of events or processes designed to solve a problem. Generally speaking, serious games propose an original and entertaining way to convey a message to the target audience. The fun aspect of the games enhances the immersion in the experience and, thus, the transfer of information. Finally, users are provided with feedback, either from the game itself or from interacting with other players.</p> <p>In this workshop, participants are invited to join the game, upload information and experiences (cultural footprints), as well as create their own multilayer dot maps and heritage quizzes. The content should be related to the "sense of places", the "European other" and the "difficult/easy past and present". Moreover, users have to read, comment and reflect on the footprints created by other players. The information shared through the entire game composes the picture of today's Europe and encourages the dialogue and the understanding between European citizens.</p> <p>Note: This is a hands-on workshop. Bring your own internet-connectable laptop or tablet and pictures associated with the content to be discussed. Presenters: Lia Galani, Athina Karatza</p>
Trends in Geography Assessment (TIGAS) framework and feasibility of test items	<p>For the past two years, a framework for an international geography assessment in lower secondary education has been designed (the TIGAS-framework). As part of the validation process of this assessment framework, prototype test items from several national and provincial assessments were selected. These prototype test items are supposed to be in line with the content domains and distinct cognitive levels of the assessment framework. In this workshop some of the selected examples of test items will be presented. Partitioners will be asked to give their opinion on these test items; e.g. if these examples are in line with the framework and if these items match with the expected difficulty for the target group. Another issue that will be addressed in this workshop is how these items could be judged and scored. What is the expected level of performance? How practical and feasible is a model to judge and score these items?</p>

## 7 Posters

no	name	title	abstract
1	Sara Jane Bezzina	Analysing Children's Spatial Abilities	<p>This study aims to discover whether transport methods, type of play and independence levels influence children's spatial skills. In the past, children had more opportunity to play outside and villages were safer to walk through. Nowadays urbanisation rates are high, and villages are considered less safe for free-range outdoor activities. This situation is relevant within the context of the Maltese Islands, which has seen an unprecedented increase of urban sprawl over the last century. Literature has focused on specialized spatial tasks such as route memorising, but few have focused on how children depict places of their choice. In addition, not much literature exists on the local scenario. To bridge these gaps, this study used a multi-method approach in which children were interviewed and asked to create a mental map of their choice, whilst their parents were given questionnaires to provide further background information of each participant. Drawings were analysed by content analysis.</p> <p>This study found out that active methods of transport and increased contact with the outside environment through outdoor play and more independence were directly linked with superior spatial skills. Transport methods are not linked with age, however, outside play and levels of independence do increase with an increase in age. Gender wise, boys are allowed more outside play and screen time which add advantage to their spatial skills. Since better spatial skills are related with better performance in scientific subjects, these skills should be emphasized in the schooling system by providing adequate conditions, such as safer urban areas, for these skills to be practised.</p>
2	Takumi Isono	Regional Development of Night Guided-tours for Foreign Tourists in Shibuya City, Tokyo	<p>This study seeks to clarify the regional characteristics of night guided-tours in Shibuya City through an analysis of the concrete activities of local tourism associations and communities related to these tours, focusing on inbound demand and Shibuya City as a tourist destination. Foreign tourists have been increasing since 2000, and the Japan National Tourism Organization announced that it had reached a record of 28,690,000 foreign tourists in 2017. Recently, the night-time economy has gained attention, contributing to the increase in foreign tourist consumption toward the upcoming Tokyo Olympic Games in 2020. This was significantly affected by two affairs, the change to the Adult Entertainment Businesses Law in June 2016, and the announcement of the immediate recommendation by the parliamentary association for promoting the night-time economy toward stimulating consumption during night-time hours in December 2017. In Shibuya City, several private sectors have practiced various night-time leisure activities such as J-Rock Tours or the Shibuya Entertainment Festival before promoting the night-time economy politically. After changing the Adult Entertainment Businesses Law, the Shibuya City Tourism Association (SCTA) promoted the night-time economy, including designing night-ambassadors and constructing a night-map for attracting more American, European, and Australian tourists who have a penchant for night-time leisure. The SCTA has prepared some paid night guided-tours for foreign tourists in April 2018 after revising the Licensed Guide Interpreter Act in January 2018. To implement these night guided-tours, the SCTA cooperates with a private organization with a successful track record of volunteer guide activities, international exchange, and street support for foreign tourists in Shibuya City. Most participants of night guided-tours are youths from America, Australia, and some European countries. The tours not only include major night-time tourism attractions such as bars, pubs, tall buildings, and</p>

			observatories but, also, some famous chain stores, family restaurants, mini event halls of idols, and so on. The relaxation of various regulations needed to implement paid night guided-tours and the aspect of town walking is strongly emphasized because they are promoted officially by the SCTA, and it is difficult to visit specific private facilities in a limited way.
3	Marine Matosyan, Ashot Khoetsyan, Armen Gevorgyan	Transdisciplinary Research for Tourism Development in the Caucasus Region / Prospects and preconditions for sustainable tourism development in Meghradzor Community, Armenia	The poster presents current and long-term opportunities for sustainable tourism development based on landscape planning and resource inventory in Meghradzor Community, the interaction between landscape and tourism, as well as the impact of anthropogenic factor on local landscapes. It is greatly reflected on how natural landscape can promote tourism development in mountainous communities. The basis of the work is the experience gained from the research done in Meghradzor in June 2018 by case study method.
4	María Luisa de Lázaro y Torres	Developing a learning line on GIScience in education (GI-Learner)	Space and location make spatial thinking a distinct, basic and essential skill that can and should be learned in school education, alongside other skills like language, mathematics and science. Keeping this in mind as the objective not only is teacher training and availability of user friendly software, ICT equipment in schools necessary but a community of learners and learning materials created by the project and available on the website: <a href="http://www.gilearner.ugent.be">http://www.gilearner.ugent.be</a> are also essential.
5	Hiroaki Sakaue	Characteristics of Education Sustainable Development in Japanese Geography Education: Focused on a New High School Subject "Comprehensive Geography"	This poster mainly focuses on Japanese high school and analyze the national curriculum "Geography-History" and documents related to Education for Sustainable Development (ESD), in order to clarify the characteristics of ESD in Japanese Geography Education. ESD has been introduced into the curriculum since 2009 and in the latest one, revised in 2018, its perspectives are expanded. At the same time, a new and compulsory subject "Comprehensive Geography (CG)" that emphasizes ESD is introduced under the new curriculum. CG is a subject that achieves problem-solving competency towards building a sustainable society focusing on dealing with global and local issues. CG has two learning units regarding ESD, "Global Understanding and Cooperation" and "Sustainable Community Planning", that tackle with contemporary and geographical issues from the viewpoints of environment condition and human activities. Global issues include problems such as SDGs, and teaching and learning of natural hazards and disaster prevention are emphasized as local issues. [This work was supported by JSPS KAKENHI Grant Number JP17H02704.]
6	Takumi Watanabe	The Characteristics of Spatial and Geographical Perspectives in Japanese Primary Education : Focused on the National	This poster clarifies the characteristics of spatial and geographical perspectives in Japanese primary education focusing on social studies through an analysis of the national curriculum and documents written by educators. According to Japanese Ministry of Education, Culture, Sports, Science and Technology, the national curriculum "Social Studies" of Primary School", revised in 2017, emphasizes an understanding of social phenomena from the following viewpoints: "location and spatial distribution", "time and process" and "relationships among people/phenomena". Therefore, spatial and geographical perspectives receive much attention from educators recently. The research method adopts qualitative analysis of contents. Through the above, this research explains the relationship between children's



		Curriculum “Social Studies” and Educators’ Thoughts	citizenship and the development of spatial and geographical perspectives in Japan. Co-authors: Hiroaki Sakaue, (Hyogo University of Teacher Education), Yu Osaka (Tokuyama University), Ryosuke Okada (Ochanomizu University)
7	Akira Nakayama	Differentiation process of tea farm business and background factors in Wazuka town, Kyoto prefecture, Japan	This study examines the differentiation process of tea farm business by associating with its background factors. A case study area is in Wazuka farmers – typical tea production area in Kyoto prefecture, Japan. In Wazuka, farmers produce higher quality Sencha (primary Japanese green tea variety) as luxury Uji-cha. Since 1990s, tea production have been deteriorated due to the sluggish price of tea, emergence competitive production area, decreasing consumption and shortage of successor. Recently, some of tea farmers start to produce Tencha (material tea leaves used for Matcha). Tea farmers in Wazuka are classified into 4 types. First type is Sencha farmers, which produce almost all of Sencha. They are usually small-scale. Second type is multi-produce farmers, which produce both Sencha and Tencha. Third type is Tencha farmers, which produce almost all of Tencha. The fourth type is Newcomer/tourism company, where young persons are starting a tea-related business.
8	Myungjin Hong	A study on the women’s tourism behaviors In the late Edo period	The Edo Period started to flourish politically, socially, and economically after Tokugawa Ieyasu established the Tokugawa Shogunate. The Edo Era was divided into three periods; Samurai Culture in the beginning, Genroku Culture in the mid-term and Popular Culture in the late. In the late Edo, the behaviors of the people changed socially and culturally. The travel to Edo and Tourism Behavior are the examples to show them. Although the society was male-dominated in the early Edo period, the social and cultural activities of women who participated in popular culture gradually emerged. These images of women can be seen on Ukiyoe(Nishikie), coloured woodblock print, and the insertion map the illustrations in the historical geography books published during the Edo period. This study was designed to examine the social status of women in the late Edo period from the point of view of historical geography using historical visual materials which show the women's social and cultural behaviors.
9	Apostolia Galani	“Cave explorers”: Using Go-Lab digital scenarios to develop arguments based on geographical features	In recent years inquiry-based learning has proven highly effective in science and more specifically in geography education. In addition, argumentation is meant to be at the heart of geography education, and especially inquiry-based learning enhances students’ argumentation skills. In this research, we would like to make use of the theoretical potential of inquiry-based learning and its positive results on students’ argumentation skills which is why we selected to work on the Go-Lab platform. Go-Lab ( <a href="https://www.golabz.eu/">https://www.golabz.eu/</a> ) is an inquiry learning space (ILS) that has been created to provide teachers, educators and researchers with the opportunity to create digital scenarios structured on specific axes according to inquiry-based learning. As a case study, we selected the topic of karst caves. The reasons lie in the areas of geography - geology, biology and education. Although karst caves are part of the geological history of Greece (70% of the Greek area is covered by limestone) and caves are unique, non-renewable resources with significant geological, biological, scientific, cultural, recreational, economic as well as diverse value, in Greek educational system (geography curricula and textbooks) they are not taught in any level of education. Hence, the purpose of our research is to investigate whether teaching about karst caves through a digital scenario created on Go-Lab platform could contribute to an effective learning of these caves and all their various dimensions. On the other

			<p>hand, as the Go-Lab platform is created on the inquiry-based learning axes, as mentioned above, it is a great context for argumentation development through a digital scenario. Besides such a digital scenario engage students to stand critical on a socio-scientific issue about this kind of caves. Consequently, our research questions are focused on the efficacy of such a digital inquiry scenario</p> <p>a. on the learning outcomes related in karst caves' concepts and</p> <p>b. on students' argumentation skills</p> <p>Until the present we have already created the digital scenario and we are about to implement it on approximately 40 / 13 year old students. To evaluate our data, we will use conceptual understanding tests (i.e. concept maps) and argumentation models (i.e. Toulmin's model). We will also use an appropriate scale to classify students' arguments according to their structure which we are interested in (i.e. Osborne's scale). Our final results on both the learning outcomes and the argumentation skills of the students will be presented at the EuroGeo 2019 conference, where we hope to discuss our conclusions as well.</p> <p>O-Authors: Katerina Zioga, Martha Georgiou, Lia Galani, Evangelia Mavrikaki</p> <p>Keywords: geography education; karst caves; argumentation; inquiry-based learning; Go-Lab</p>
10	Simon R.Ohlenforst	Enabling children to develop a variety of spatial concepts	--

## 8 Next conferences

### 8.1 EUROGEO 2019 Slovenia Hidden Geographies

The 2019 EUROGEO Annual Conference will be organised in August 2019 in Ljubljana, Slovenia. Find out more about the conference and register for the meeting at <http://hiddengeographies.geograzee.com>



100 years of geographical ventures



*Join us in Ljubljana, Slovenia, 29–31 August 2019 at the EUROGEO 2019 Conference Hidden Geographies. The conference will be part of the activities dedicated to the celebration of the 100th anniversary of the Department of Geography and the University of Ljubljana.*



**Hidden geographies** in a very broad sense refer to ways of spatial arrangements of natural or real or imagined features, relations or processes in a landscape that are hidden in any possible way, such as (so far) not visible, unseen, kept out of sight, concealed, disguised, masked, unrevealed, unperceived or unknown. Hidden to majority or to individuals, to science, to public or maybe to certain groups. Hiding may be deliberate, e.g. to protect (natural environment, privacy, human rights) or for (economic, political) advantage. However, the majority of geographies remain hidden due to lack of information or lack of knowledge how to deal with them. Geography, cartography, remote sensing, geoinformatics and other disciplines focusing on spatial aspects of the nature and societies, supported by the ubiquity of the ICT, and enormous quantities of available spatially positioned quantitative and qualitative data reveal, or at least assess enormous amounts of (so far) hidden geographies, which create a growing need to adequately select, interpret, model and relate this information to the existing knowledge.

**Hidden geographies** are everywhere, and many have substantial impacts on (other) natural processes, which consequently trigger changes, for example in the landscape, economy, culture and quality of life.



The conference EUROGEO 2019 will provide the opportunities to discuss the origins and consequences of the daily expanding complex world of *hidden geographies*, the awareness of them, their perception, understanding, interpretation and use in research, education, policy-making, management or everyday life. You are invited to contribute to any of the aspects of our discussion on this special and overlooked view on the geography, including:

- gathering, studying, interpreting examples of hidden geographies in any spatial scale; examples may range from in-depth qualitative analyses of interviews, literature, artworks and internet materials, to highly quantitative analyses of remotely sensed imagery or positional data from mobile devices, from simple field explorations of human or animal spatial behaviour or public opinion using mobile applications, to complex geographic modelling;
- discussing the impacts of hidden geographies on theories and practices in academic discourses;
- discussing the roles of science and technology in revealing or protecting hidden geographies, or their impacts on landscapes or people's spatial behaviours;
- discussing ethical, legal, political aspects of keeping hidden, or un-hiding the hidden geographies;
- discussing the roles of education in increasing the awareness of hidden geographies, knowledge and skills to discover them and live with them. A special track of the conference focusing on educational topics will partly overlap with Ilešič's Days, the national conference for Slovenian geography teachers.



We invite you to propose paper presentations, posters or workshops on any topic related to hidden geographies. Selected papers, resulting from the presentations at the conference, will be published in a thematic issue of the European Journal of Geography after the conference.

The optional post-conference excursion will include a visit to the UNESCO World Heritage site Škocjan Caves and a picturesque village Goče at the karstic edge of the wine-producing area of Vipava Valley.

More information about the conference at: <http://hiddengeographies.geografija.si>

## 8.2 EUROGEO 2020 conference Madrid

The next big conference of EUROGEO will be in March 2020.  
Location will be Madrid.

All information will be available on our website: [www.eurogeography.eu](http://www.eurogeography.eu).