

# European Association of Geographers

## Annual Conference 2018

### Abstracts – listed in session order

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|---|---|
| <p>A1 Ryo Iizuka,<br/>Shumei<br/>University</p> <p>The<br/>development of<br/>urban gardens<br/>and sense of<br/>community in<br/>Leicester City,<br/>England</p>   | <p><b>The development of urban gardens and sense of community in Leicester City, England</b></p> <p>High-quality urban green space is widely regarded as a neighbourhood characteristic important for the physical, mental, and social well-being of its residents. Because of globalisation, improving ethnic relations in urban areas has historically been an important issue. Previous studies have shown that leisure and recreation in urban green spaces can act as environments for interethnic interaction to occur because of free choice and self-determination, which are important because they give individuals the opportunity to choose their members without any restrictions that often exist in formal settings. However, few studies have focused on the differences in community building and development between each type of green space and ethnic group. This study addresses the issue of how urban green space, especially urban green gardens, relates to developing communities for people of different backgrounds. We explore empirical evidence concerning (1) how differences in allotment, community gardens and community allotment to join gardening activities within green gardens motivate people, (2) what practices take place in each garden and (3) which individual and collective processes are associated with gardeners' interactions in the gardens from the case study in Leicester City, one of most multicultural cities in the UK. Through empirical research we found that urban gardens have contributed to community development in multi-ethnic regions. In addition, we suggest that positive contacts in urban gardens can increase social capital among people of all racial and ethnic backgrounds.</p> |
| <p>A1 Jonghyun<br/>(Sohgen) Park<br/>(Boku), Hosei<br/>University</p> <p>Sustainable<br/>Regional<br/>Development<br/>Strategy for<br/>International<br/>Regional<br/>Innovation<br/>Systems in Asia:<br/>Case Studies of</p> | <p><b>Sustainable Regional Development Strategy for International Regional Innovation Systems in Asia: Case Studies of the Nanopia plan of Miryang city, Korea and the KSRP plan of Kitakyushu city, Japan</b></p> <p>The purpose of this study is to explore how local governments in marginal regions in Korea and Japan have promoted a sustainable regional development with initiatives aiming to establish a Science and Research Park (SRP), focusing on the feasibility of International Regional Innovation Systems in Asia. Based on the in-depth interviews conducted from March to September 2017, this study considers two cases of SRPs that attracted much attention in Korea and Japan: Nanopia Plan promoted by Miryang city in Korea and KSRP (Kitakyushu Science and Research Park) Plan developed by Kitakyushu city in Japan. Albeit both cities have promoted different types of SRPs, we find it possible to draw a parallel between each experience: (1) both cities have strived for implementing initiatives regarding SRPs, since SRPs have been perceived as the main mechanisms that can encourage regional innovation systems and technology transfer, attracting economic benefits. (2) The endeavors of local governments must have played a decisive role in constructing SRPs in marginal regions. The developing experiences of Kitakyushu city where KSRP has already been put in place illustrate: (1) the role of the local government as an intermediary that encourages stakeholders on-site to establish knowledge networks on a diversity of levels and (2) the direction of city development including residential functions. The feasibility of</p>   |

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the Nanopia plan of Miryang city, Korea and the KSRP plan of Kitakyushu city, Japan

formulating international regional innovation systems in Miryang city will be ascribed to the following two factors: (1) the consideration of the geographical proximity with the Busan metropolitan area that has already started to make robust networks with Kyushu region and (2) the promotion of close collaborations with a constellation of clusters in Kyushu region.

Keywords: Sustainable regional development, international regional innovation system, triple-helix model, Nanopia plan, KSRP plan, Miryang city, Kitakyushu city

A1 Dalma Schmeller, University of Pécs,  
Brownfields as possible new green spaces in cities – case study of Pécs

### **Brownfields as possible new green spaces in cities – case study of Pécs**

Besides all the problems they symbolise, brownfields are important parts of cities' structure because they are able to offer good opportunities to develop. These fields are underutilized and usually located in urban areas. To reuse them, local municipalities have to intervene and create new function in most cases. Often the new functions are recreational, including of designing new green spaces. One of the biggest problems with rehabilitation like this comes from its long-term maintenance costs because green spaces could not make profit for the investors so green space developments are usually the local municipality's task, wherever long-term effects of citizens' welfare and city's image could be important, than pure fiscal view. My presentation tries to answer the question, how these brownfields could be reintegrated to the city's system and be used for various functions. I would like to present Pécs (Hungary) as a case study, which is a middle-sized post-socialist city with former mining functions. Brownfields in this city offer good opportunity to create green spaces in urban environment, as a kind of a correction of mistakes made by the planning in the last century. I analysed Pécs' recent planning documents and projects to search the brownfield developments and its law, financial background. Pécs' municipality submitted the application for European Green Capital award for many years but it was not successful. Brownfield reintegration as green spaces could improve city image and create a healthier atmosphere, furthermore it could help to win this award. In the presentation I suggest a plan for some possible new park with mixed functions. My results show that Pécs has good opportunities to create new green spaces and Ljubljana could be an adequate example to follow. Pécs' population is open-minded and think that there are not enough parks in the city.

A2 Daniel Buis, EGEA,  
Trigger Analysis and Modelling of Very Large Debris Flows in Santa Teresa, Cusco, Southern Peru

### **Trigger Analysis and Modelling of Very Large Debris Flows in Santa Teresa, Cusco, Southern Peru**

The town of Santa Teresa (Cusco Region, Peru) has been affected by several large debris-flow events in the recent past, which destroyed parts of the town and resulted in a resettlement of the municipality. The debris flows on the order of 5 to 25 mill. m3 volume rank among the largest recently observed events of this type worldwide. Despite their extreme dimensions, these events have not been studied in detail. An important limitation for more insight studies is the remote location of the mass flows and the very sparse information and data available for the study region. Neither triggering processes nor mass flow process characteristics have been understood to date. This thesis tries to fill some of these gaps in understanding that are critical to improved assessment of hazards and eventual risk reduction measures.

Trigger analysis was based on field work data, a limited number of ground based meteorological data and complementary satellite

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derived data. Results indicate that in the case of the Sacsara event, heavy rainfall likely was a main trigger. For Ahobamba, antecedent rainfall as well as snow and ice melt leading to saturation of glacial sediments must have played an important role. Simulations with a dynamic debris flow model (RAMMS) allowed to constrain a number of flow parameters such as flow height and velocity, runout distance and flow and deposition volumes. Strong surging flow behaviour was detected, resulting in very large runout distance (exceeding 20 km). Based on the simulation results, potential future debris-flows scenarios of different magnitudes, including outbursts of two glacier lakes, are modelled for assessing the hazard. A preliminary hazard map showed that several communities in catchments draining towards Santa Teresa are endangered by mass movements. Monitoring of the hazard situation is strongly recommended. Design and implementation of tailored risk reduction strategies are undertaken in a consecutive paper within an international Peruvian-Swiss project in close collaboration with local communities and the municipality of Santa Teresa. This resulted in a paper published in the "Landslides" journal.

A2 Christopher Dabon, Memorial University of Newfoundland, Emotions and their ability to influence the acceptability of lethal management toward canids in Newfoundland: An application of the Potential for Conflict Index2.

### **Emotions and their ability to influence the acceptability of lethal management toward canids in Newfoundland: An application of the Potential for Conflict Index2.**

This research paper explored the acceptability of killing canids in the island portion of Newfoundland and Labrador. Data were obtained from 342 self-administered questionnaires from communities neighbouring Terra Nova National Park and Gros Morne National Park in the Summer of 2017. Overall respondents had mostly negative emotions toward canids which contributed to an extremely high acceptance of lethal management based on seven different scenarios. Moreover, respondents who held negative emotions were more accepting of killing canids, as well as, had a higher degree of consensus. In contrast, respondents who had positive emotions toward canids had less consensus and viewed killing as less acceptable. Understanding the acceptability of lethal management in different scenarios and contexts allows managers to make informed decisions that will mitigate conflict and will have consensus and support.

A2 Leila Gorji, Shakhos Pajouh Research Institute  
The Zoning of

### **The Zoning of nitrate concentrations in Meymeh aquifer by using GIS**

The increase of Nitrite and Nitrate in groundwater resources has caused many concerns in agricultural and industrial areas. Nitrate has always been under focus as one of the indicators of chemical water pollution. The Objective of this study is to determine the amount of nitrate in Meymeh aquifer in Isfahan province.

In order to determine the amount of nitrate, Samples were taken from 10 wells based on sampling standards transferred to Water

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nitrate concentrations in Meymeh aquifer by using GIS

Laboratory for analysis. Spectrophotometric method was performed to measure the amount of nitrate. Then, the zoning of nitrate changes was drawn by using ArcGIS 10 and Interpolation models. Electrical conductivity from the selected wells was from 823 to 4170 $\mu$ s/cm and the average nitrate concentration was 30.64 ppm with a standard deviation 19.77 from 8.51 to 59.43 ppm. In 68% of analysed samples, the standard deviation was observed to be about 19.77 which indicate a close distribution of obtained data to average concentration of results. Electrical conductivity of water Samples from high elevations toward the plains feeding areas increases from the Northeast and West toward the Central Plains. The highest concentrations of nitrate is related to the southern aquifer that Most likely is due to high groundwater levels and farming activities in the region. Although the average nitrate concentrations in most of the samples is less than 50 ppm, but it is still vital to protect groundwater resources from pollutants.  
Key words: Nitrate Pollution, GIS, Meymeh aquifer

A2 Nor'Aini Yusof, Universiti Sains Malaysia

The Direct and Moderating Role of Geographical Factors on the Determinants of Environmental Performance

### **The Direct and Moderating Role of Geographical Factors on the Determinants of Environmental Performance**

This study investigates the impact of geographical factors on the environmental performance of construction firms. We attempt to answer two questions: i) Do geographical factors directly impact the environmental performance of firms? and ii) Do broader geographical operations enhance the impact of the environmental determinants of construction firms' environmental performance. Environmental performance is measured by compliance to environmental standards and minimisation of pollution, waste, toxic materials and energy. Four geographical operations of construction firms were considered – local, regional, national and international. We conceptualised relative advantage, compatibility, quality of project team members, regulatory pressure, client pressure, government support and geographical factors as determinants for environmental performance. We hypothesised that geographical factors have a direct effect on environmental performance and moderate the effect of other determinants on environmental performance. A questionnaire survey was distributed face-to-face to project team members, and the data were tested using the Partial Least Squares Structural Equation Modelling (WarpPLS version 6.0). The results reveal that geographical factors have a direct and significant impact on environmental performance. Also, compatibility factor, quality of project team and client pressure have a higher effect on construction firms' environmental performance if they broaden their geographical operation to the international market. The study underscores the importance of geographical factors in achieving a higher level of environmental performance among construction firms. Several practical implications were presented to guide managers targeting for the international market.

A3 Apostolia Galani, National & Kapodistrian University of Athens

Satellite imagery

### **Satellite imagery in education: Implementation and evaluation of ESA's educational material "Climate change and glaciers" – Teaching proposals**

According to literature, satellite imagery and its use in teaching has positive effects on geographic education. Amongst those stand out the development of geographic thinking, the holistic understanding of the world and the recognition of the problems the conscious citizen of the future will encounter. This research forms part of a broader postgraduate work that took place at the Pedagogical Department of Primary Education of the National and Kapodistrian University of Athens. The field it falls in is Satellite Imagery in



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in education:  
Implementation  
and evaluation  
of ESA's  
educational  
material  
"Climate change  
and glaciers" –  
Teaching  
proposals

Education and its aim was the implementation and evaluation of educational material (lesson plan and satellite images) in a case study under the title "Climate change and glaciers" created by the European Space Agency (ESA). The educational material of said case study was analyzed and implemented in the classroom to identify both positive aspects and points for improvement. Subsequently, qualitative proposals for upgrading the material were applied in the classroom. This led to the identification of necessary elements in making the material effective and useful for the Greek students.

Co-authors: Athina Karatza, Lia Galani, Isaak Parcharidis

A3 Jonathan Otto,  
Universität  
Hamburg,  
  
Computing  
education and  
contextualization  
in GIS  
education

### **Computing education and contextualization in GIS education**

Responding to the integration of GIS into the German Educational Standards for Geography in secondary schools, most Universities in Germany have started including GIS courses in undergraduate programs for pre-service Geography Teachers. However, educational standards and designs are still missing. Studies show a lack of interest and motivation of Teachers working with GIS and problems understanding the related activities. Pre-service Geography teachers relate GIS more with scientific and industrial work and do not perceive the technology as an opportunity to design Geography Education. Consequently, there is a strong need for improving GIS Education in Teacher Training.

Set in an interdisciplinary research project between Geography, Geography Education and Computer Science Education, we have started developing an educational design for undergraduate GIS courses using Educational Design Research. The new educational design is being implemented and evaluated at the University of Hamburg.

Our new educational design is focused on integrating contextualization and relevance for the school curriculum as well as computing concepts in order to increase the motivation and interest of future Geography teachers to keep engaged with GIS. Computing concepts, such as data structures and models, algorithms and information systems should give the students the basics to understand what happens in the background and help with the transfer towards an independent use of GIS technology. In addition we also use computing education concepts, for example "Computer Science (CS) in Context", to orient the course content around real world contexts to further motivate and engage the students. The main context we use in our pedagogical approach is the analysis of climate change as it is an important field within the subjects of Geography and Education for sustainable development and GIS gives us many options to analyze and visualize climate-related phenomena.

A3 Salvatore  
Eugenio  
Pappalardo,  
University of

### **Building geo-skills, permanent learning, and decent work: what is the role of GIScience and Unmanned Aerial Vehicles in promoting the 2030 sustainability goals?**

Geographic Information Science has been considered the "common cause for the interdisciplinary research" (Onsrud, Kuhn, 2015). In



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Padova,  
Building geo-  
skills,  
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the Era of the Unmanned Aerial Vehicles, which may embody the integration of many geotechnologies and geof ormation even more diffused, the University of Padova launched the first edition of the second level professional Master in "GIScience and Unmanned System for the integrated management of the territory and the natural resources", based on the interdisciplinarity of five departments and a network of enterprises and NGOs. In the first edition the Master program was differentiated in four different curricula; in the third edition (2017/2018), the Master offers seven different curricula, introducing a new one in "GIScience and geohumanities". By the book "Education for people and planet: Creating sustainable futures for all" (2016) UNESCO started the monitoring system for the goal 4 of the Sustainable Development Goals: "Ensure inclusive and quality education for all and promote lifelong learning". From the perspective of the SDG 2030 this paper investigates possible integration between permanent learning, decent work, sustainable development, technological innovation and the opportunity windows of using the platform provided by a second level professional Master to facilitate integration between youth, enterprises and territory. Co-authors: Massimo De Marchi, Salvatore Pappalardo, Daniele Codato, Alberto Diantini, Federico Gianoli

A4 Michael  
Morawski,  
University of  
Cologne,  
How peer  
feedback affects  
written  
argumentation  
skills in the  
geography  
classroom - A  
case study

### **How peer feedback affects written argumentation skills in the geography classroom - A case study**

Being able to argue is a central skill, which is (not only but with special emphasis) supposed to be acquired in geography education, in order to educate pupils towards democratically participating citizens. Written argumentation skills are often overlooked in geography classrooms before A-Levels. Language-aware geography education, however, demands a more reflective analysis of linguistic challenges in the subject and an adaption of supportive methods for pupils to deal with those in all grades. The presentation intends to illuminate in how peer feedback can be used for pupils to optimize their argumentative texts about a political geographic problem on different levels, such as text structure, language use and quality of argumentation. For that, a case study in a bilingual geography and in a regular class was executed, in which a designed feedback sheet was tested with a mixed-method approach. The results of the case study will be presented here in order to discuss the potential of a broader application of peer feedback in geography education.

A4 Dmitrii Sidorov,  
California State  
University Long  
Beach  
Online field trips

### **Online field trips in teaching geography of Russia**

This paper presents my experience of teaching video-intensive online geography courses without giving up on student field trips. Rather than being an oxymoron, online geography field trips provide opportunities that are not available in off-line courses. Examples provided will be primarily related to a course on geography of Russia.



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in teaching  
geography of  
Russia

A5 Michael  
Leuchner,  
Springer  
Science +  
Business Media  
B.V.,

### **Scientific Publishing with Springer Nature**

A short overview on scientific book and journal publishing with Springer Nature, one of the world's largest academic publishers, is presented. Twelve different scientific book publication options are introduced, including the new EUROGEO book series 'Key Challenges in Geography', and novel developments in the publishing business as well as new services for authors such as the manuscript transfer desk among journals, the transparency tool Bookmetrix, the automated optimal journal finder, the content sharing initiative and the Springer Author Academy are discussed providing some help and guidance on the way to the optimal publication platform for the research output. The presentation will provide an overview on the topic, but interested scientist and authors are invited to participate in a subsequent workshop, where different options and specific questions will be answered in detail and also concrete ideas and proposals can be discussed.

Scientific  
Publishing with  
Springer Nature

A5 Joe Usher,  
Dublin City  
University  
  
Geography for  
All: Investigating  
Primary  
Geography  
Textbooks'  
Potential to  
Support Critical  
Thinking,  
Enquiry and  
Intercultural  
Education

### **Geography for All: Investigating Primary Geography Textbooks' Potential to Support Critical Thinking, Enquiry and Intercultural Education**

When pupils of any age learn geography in school they are extending their world picture and reshaping it" (Roberts, 1992: 46). This paper analyses representations of Africa and African countries and cultures in Irish primary geography textbooks and assesses to what extent these textbook portrayals facilitate or repress intercultural education, specifically critical multicultural education (CMCE). Here, this paper argues that primary geography can and should play a critical role in challenging societal issues of inequality, racism, prejudice and stereotypes, particularly pertaining to perspectives of 'the other' (i.e. minority groups within society and people living in 'other' places), however this potential is inhibited by an over-reliance on textbooks.

This paper devises a framework for CMCE applies this to Irish primary geography textbooks. While some textbooks can demonstrate some capacity in fostering multiple perspectives, appreciation for diversity, development of critical thinking and enquiry, and making connections; in the main, textbooks present stereotypical, oversimplified accounts of issues, peoples and places which can result in more entrenched feelings of superiority amongst dominant groups and more entrenched feelings of "otherness" amongst minority groups.

B1 Alkuwari Mohd,  
Qatar University  
  
3D Visualization  
of Demographic

### **3D Visualization of Demographic data and urban planning: A Case study of Doha city, The State of Qatar**

In Qatar, demographic data on various aspects is made available by Qatar Statistics Authority (QSA) for socio-economic researches and planning. The data is made available to the users is lowest at Census Block level which is a group of 100-150 buildings. However, the building level data is required for micro-spatial analysis for improved urban planning, public facility management,

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- data and urban planning: A Case study of Doha city, The State of Qatar
- disaster management and emergency awareness, consumer and retail market analysis, environment and public health programs and other demographic studies. Geographers use dasymetric techniques for interpolation of such data. This research will demonstrate the application of latest GIS techniques in interpreting and analyzing the demographic data to the users and students using the Areametric (2D) and Volumetric methods (3D) for estimating building population based on census block and building footprint datasets. The exercise will be carried out for a few sample areas of Doha based on the results of the latest census conducted by QSA. ArcGIS will be the main GIS software used besides visualization facility for enhanced visual impacts.
- B1 David Sümeghy, University of Pécs,  
Change in Social Capital in the Baltic States - Role of the Russian Minority
- Change in Social Capital in the Baltic States - Role of the Russian Minority**
- In the past years, Russia emerges again as one of the world's political superpowers. The annexation of Crimea created an old-new geopolitical aspect (and as some people think a threat) in Central and Eastern Europe. The Russian sphere of interest historically contained the Baltic States, who nowadays are members of both the NATO and the European Union. This potential fear could easily undermine the Baltic societies. In this paper, I examine the effects of the Russian minority and the ethnocultural diversity on the social capital, inter-group contact, and some socioeconomic variables. I use longitudinal survey databases in the period from 1990 to 2015.
- B1 Annamaria Uzzoli, Centre for Economic and Regional Studies Hungarian Academy of Sciences  
Inequalities in Access to Health Care in Hungary – Case Study on Regional Differences of Infarction Morbidity and
- Inequalities in Access to Health Care in Hungary – Case Study on Regional Differences of Infarction Morbidity and Mortality**
- The remarkable Hungarian health inequalities are based on poor health conditions of the population and the functional conflicts of health care system. One of determinative factors in health inequalities is the difficulty in access to health care services. To define the role of access to health care in health inequalities with its regional differences is necessary to analyse morbidity and mortality data of acute myocardial infarction (AMI). Firstly, AMI as an ischemic heart disease remains a leading cause of cardiovascular morbidity and mortality all over the world. Secondly, in short term survival chance can increase if after the first symptoms of heart attack the patient receives modern interventions as soon as possible. Thirdly, in long term 30 days survival chance can increase if the patient receives the rehabilitation care as soon as possible after finishing the acute care period. The applied statistical analyses were based on AMI morbidity and mortality data (ICD I21-I23) by gender between 2005 and 2015 at the territorial level of counties (NUTS-3) and administrative units as districts (LAU-1). Spatial inequalities were examined with some inequality indicators (e.g. Gini coefficient), while spatial impact was analysed spatial autocorrelation and spatial simultaneous autoregressive lag model estimation. Our applied quantitative method could also realize an international comparison between Hungary and European countries and also could achieve a comparison between morbidity and mortality data. The most informative results of the statistical analyses are the followings. The number of AMI morbidity as generally 155,000 while the number of AMI mortality is more than 6,000 in Hungary in every year. It means approximately one fourth of all AMI cases is ending with death. AMI is the leading death cause among cardiovascular diseases in the European countries as well as in Hungary. On the one hand, the Hungarian AMI mortality rate decreased with almost 50% in the last 15 years, but on the other hand, the country

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- Mortality is lagging behind the most developed European countries due to this death cause. The paradox situation which is explained by improving AMI morbidity and mortality with increasing spatial inequalities in Hungary demands more details on a specific research focus with the method of regional studies. AMI morbidity and mortality data proved that increasing territorial differences can be experienced especially in female AMI mortality and this increasing tendency has happened after financial and economic crisis of 2008-2009. There are many socio-economic factors which can influence access to AMI care. It must be examined these influencing individual (e.g. health behaviour) and institutional (e.g. supply standards) factors in the future, especially by local case studies. The paper is supported by National Research, Development and Innovation Office – NKFIH (K 119574).
- B2 Nadeem Hashem / Perumal Balakrishnan, Qatar University,  
At what expense? Effect of accelerated development on coastal land use/land cover: case of the State of Qatar  
**At what expense? Effect of accelerated development on coastal land use/land cover: case of the State of Qatar**  
The eastern coast of Qatar is characterized by land reclamation, high population density and concentrated infrastructure development which are threatened by sea-level rise due to climate change. This study focuses on the analysis of coastal LU/LC change in this study area between 1986 to 2015, the period characterized by accelerated development due to oil and gas boom. Data used in this study include Landsat and Aster satellite imagery, socioeconomic variables, topography, geology and soil maps, as well as in-situ data for ground truthing and classification accuracy assessment. Maximum Likelihood Supervised classification method was used to extract LU/LC types. Results show an increase of 104% of built-up areas, elimination of salt marshes and wetland lands, and a major change to coastal line due to land reclamation, which added around 2000 Hectares of land. Study findings are first of their kind in Qatar, and they may constitute a baseline information for future investigations.  
Co-authors: N. Hashem and P. Balakrishnan
- B2 Jordi Sandalinas, University of Barcelona,  
Land - Sea interaction in marine cadastre and marine spatial planning  
**Land - Sea interaction in marine cadastre and marine spatial planning**  
Marine Cadastre and Marine Spatial Planning 's potential complexity embrace land-sea interactions that might show how unclear could be to define such an environment of data and regulations. However, law instruments, sovereignty issues and data management can make a huge different for climate change if properly studied. Marine cadastre and MSP face a deadline scheduled for 2021. The Marine Spatial Planning Directive (Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014) refers to the process of allocating or developing a public allocation plan to distribute, spatially or temporally human activities in marine areas. Maritime spatial planning will contribute to the effective management of marine activities and the sustainable use of marine and coastal resources, by creating a framework for consistent, transparent, sustainable and evidence-based decision-making. Recital 9 states that in order to achieve its objectives, this Directive should lay down obligations to establish a maritime planning



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process, resulting in a maritime spatial plan or plans; such a planning process should take into account land-sea interactions and promote cooperation among Member States. Moreover, landlocked Member States would be under a disproportionate and unnecessary obligation if it had to transpose and implement this Directive. Therefore, such Member States should be exempted from the obligation to transpose and implement this Directive in due time

B3 Lieselot Lapon,  
Ghent  
University,  
  
How accurate is  
our mental map  
of the world?  
The influence of  
map projections,  
used in  
education and  
web map  
applications, on  
our global-scale  
cognitive map.

### **How accurate is our mental map of the world? The influence of map projections, used in education and web map applications, on our global-scale cognitive map.**

Estimating the real size of countries and continents is a challenging task for people. These estimations are influenced by several factors. One of these elements that play a role in the development of our mental representation of the world is the choice of map projection, used in educational materials or web maps. Furthermore, elements such as age, nationality and educational background are considered to have an impact as well.

With this research we want to explore worldwide how our mental map is influenced. On the one hand, we will investigate the importance of educational materials (schoolbooks and atlases) in creating our world view and on the other hand, how the use of web maps influences this global-scale cognitive map. It is interesting to analyze if there are differences between nationalities, for example, between participants living in Europe or in Africa (oversized versus not oversized by the Mercator projection)? Or is there a difference between elderly and young people, and is this linked with different maps used in their educational materials?

By using an online tool, participants can estimate the real size of some selected countries or continents compared to a reference area, e.g. Europe. The data, collected around the world, will be used in the context of this research but in the meantime the tool can easily be integrated as educational instrument in classes about cartography and maps. Feedback about the estimations is delivered by the tool as well.

B3 Anthoula-  
Styliani  
Passadelli,  
University of the  
Aegean  
  
Exploring  
Geography  
Student's  
Spatial Abilities  
through a  
Topographic  
Map

### **Exploring Geography Student's Spatial Abilities through a Topographic Map Assessment Test**

Spatial thinking, as defined by the National Research Council's Committee on Support for Thinking Spatially, is a constructive combination of cognitive skills comprised of knowing concepts of space, using tools of representation, and applying processes of reasoning. Several researchers suggests that geography and use of geospatial technology tools support and facilitate the acquisition of spatial thinking. Moreover, researches supports that spatial thinking is crucial and very useful in one's life as well as in his career success and, that it can be improved through education and training. In this context, this research investigate the influence of geography studies on the development of students' spatial abilities. For this purpose a questionnaire was conducted to 68 students, 31 men and 37 women, aged 18 to 26 years old. Of these 6 students were in the first year, 16 were in the second year, 18 were in the third, 19 in the fourth and 9 in the fifth year of their studies. For this quantitative research was used random sampling and participated students from the four directions of the Department (Physical Geography, Human Geography, Spatial Development and Planning and Geo-Informatics). The questionnaire consists of two parts: in the 1st part questions related to the students demographic data and in the 2nd part included 18 questions from a Topographic Map Assessment (TMA) test. Using SPSS v23 we have coded the student's

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Assessment Test	<p>answers and set the score. The results showed that the students of the first year had the lowest score and the students of the fifth year had the highest score. We also observe a great significant correlation between the grade in the cartography course and the overall score that the students collected from the questions in the TMA test. Although the research sample is limited and does not allow generalization of the conclusions, our research results match to the theoretical framework.</p> <p>Keywords: spatial thinking, cartography, geography studies, undergraduate students, TMA test</p> <p>Co-authors: Klonari, A. and Passadelli, A. S.</p>
<p>B3 Luc Zwartjes, Ghent University,  GI Learner: Developing a learning line on GIScience in education</p>	<p><b>GI Learner: Developing a learning line on GIScience in education</b></p> <p>GI Learner is a three year Erasmus+ KA2 strategic partnership project, aiming at integrating geospatial literacy, geospatial thinking and GIScience into schools. Although it is seen as one of the most important sectors in the economy it is seldom really taught in secondary schools. GI Learner aims to respond to this by the development of a GIScience learning line for secondary schools, so that integration of spatial thinking can take place.</p> <p>A first step was translating results of an extended literature review into a list of spatial and other competences and learning objectives. The different levels of complexity used hereby, referring to the taxonomy of Bloom, take into account age and capabilities of students. For each of the competencies lesson materials are now being produced, thus facilitating the implementation in education on short term.</p> <p>The developed learning line will increase the importance of geospatial smart thinking and help produce the workforce we need now and for the future and geospatially literate citizens.</p> <p>The GI Learner project website (<a href="http://www.gilearner.eu">http://www.gilearner.eu</a>) already shows the first results: a state-of-the-art literature review and the developed learning line with selected competencies. Linked to the website an online course platform is being developed that will include all lesson materials.</p>
<p>B4 Armin Rempfler, University of Teacher Education, Lucerne,  System Competence Modeling in Geography</p>	<p><b>System Competence Modeling in Geography Education</b></p> <p>The great challenges of the 21st century (e.g. ecological depletion, climate change, resource wars) are geographically relevant highly complex circumstances. Like almost no other subject, geography has the potential to make learners aware of this complexity and to help them understand how to deal with it adequately. To achieve this, instructional problems not only require a didactic reduction of facts, but also an increase in the self-complexity of the students. This means that students need to be instructed to make more cognitive decisions per action, which implies running through causes and their causes, or effects and effects of the effects, and so on, in their mind. According to this understanding, high self-complexity is congruent with high system competence. In contrast to non-systems thinking, a system thinker takes superordinate principles of systems into account in a cognitive analysis and mental representation of geographic circumstances. This principle-led perspective provides deeper understanding of the internal and external interplay and complexity of systems, which may prevent human interference in such systems having unpredictable and unwanted adverse effects.</p>



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Education A key requirement for promoting system competence in the course of instruction is its diagnosis on the part of the students. That is why we theoretically developed and empirically verified a competence model. The paper will describe the core idea of the theoretical background and empirical validation process and especially give an insight into the possible applications of the new measurement instrument.

B4 Michael Solem,  
Texas State  
University

### **Trends in International Geography Assessment Study: Design and Development**

Trends in  
International  
Geography  
Assessment  
Study: Design  
and  
Development

The guiding research question for this project is: What characteristics of assessment design, implementation, and delivery enable internationally valid comparisons of what students in lower secondary education settings know and are able to do in geography? Evidence-centered design will inform assessment research and development activities over four phases/years in the United States, Australia, Singapore, Czechia, Switzerland, South Korea, and the Netherlands. In Phase 1, we will convene a test development committee who will advance the development of the assessment framework, as well as begin the item development process. In Phase 2, we will develop pilot items and assemble pilot test forms. Phase 3 will include the test administration and scoring of items. And in Phase 4, assessment data will be analyzed and reported. Key outcomes will include: 1) a geography assessment modeled on the Trends in International Mathematics and Science Study (TIMSS), 2) delivery of the geography assessment for review at the 2021 TIMSS National Research Coordinators conference, 3) a detailed report on the iterative development processes used to develop the geography assessment, including pilot-testing procedures and processes for item revision, and 4) increased opportunities for international collaborative research and greater capacity for graduate research in geography educational assessment. The National Center for Research in Geography Education (NCRGE) will serve as the management hub of this project and coordinate the research activities performed by the U.S. and international investigators. ETS will organize the administration and analysis of the pilot assessment in U.S. schools and the deployment of the assessment to test administration sites in the participating foreign countries. The International Association for the Evaluation of Education Achievement (IEA) and the TIMSS & PIRLS International Study Center at Boston College will prepare the geography assessment for future dissemination in TIMSS by cultivating the necessary foreign government relationships and finalizing procedures for survey and questionnaire development, field training methods, and test administration.

B4 Michael Solem,  
Texas State  
University

### **A Research Coordination Network for Transformative Research in Geography Education**

A Research  
Coordination  
Network for  
Transformative  
Research in

This paper considers the concept and significance of transformative research in the context of geography education. It provides an overview of how the capacity-building activities and management operations of a research coordination network (RCN) are designed to support broad-scale advances in geography education theory, methods, and practice. Vignettes of RCN activities are presented as examples of pathways toward transformative research in the areas of geography learning progressions, assessments of spatial thinking, and geospatially-enabled project-based learning. Beyond the prospect of introducing new paradigms of learning and using research findings to inform and systematically change approaches to teacher education and curriculum development, a RCN offers an opportunity to plan broad-based strategy and develop leadership needed to address many longstanding challenges that have



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Geography  
Education

undermined the quality and quantity of geography education research. These challenges include the low-visibility of geography education research relative to other geographic subdomains, the difficulty of carrying out interdisciplinary and international research collaborations, low rates of transfer and uptake of research findings in practitioner communities and in policymaking, and the erosion of graduate-level programs that prepare students to plan and design conceptually-rigorous educational research in geography.

B4 Joseph  
Stoltman,  
Western  
Michigan  
University,  
  
Trends in  
International  
Geography  
Assessment  
Study: Goals  
and Rationale

### **Trends in International Geography Assessment Study: Goals and Rationale**

Geography education has the opportunity to participate in an international assessment of geography modeled after the Trends in Mathematics and Science Study (TIMSS). Participation in the Trends in International Geography Assessment Study (TIGAS) will provide geography education research and practice with opportunities to: 1) collect and use data from TIGAS to evaluate and design curriculum; 2) periodically review, analyze and recommend core content and skills for geography education based on data; and 3) use TIGAS assessment results to enhance geography's role within education and society in general. This paper will address the following questions that are basic to TIGAS.

1. What does geography offer in order to qualify as a subject that all students should study in their school experience? (Building A CASE for Geography)
2. What geography information should students know by a particular age or grade? (The Knowing Effect), and
3. What geographic skills should students be able to demonstrate by a particular age or grade? (The Doing Effect)

The intended outcomes of TIGAS will provide useful information that will benefit the geography education community. There will be pedagogical and research benefits that flow from the assessment study that will be useful in evaluating educational policies and practices. Information from TIGAS will be valuable in identifying the effects of learning geography among students in different countries. Among the numerous benefits of the study, the following four are highlighted.

1. The assessment study will provide educational practitioners with data to analyze and design the curriculum in geography education. Those data will be useful in developing curriculum based on internationally recognized criteria established by the assessment framework.
2. The assessment study will provide educational practitioners with content referenced assessment data based on the core content and skills of geography. The assessment is based on powerful geography content identified in an international study of curriculum documents.
3. The assessment study will provide data necessary to examine the effectiveness of teaching methodologies and instructional practices in geography. Evidence of high level applications of geography content in spatial and critical thinking and problem solving is planned as a component of the assessment study.
4. The assessment study will provide data that will enable extended research in geography education. It will also provide a window on international geography education in 2023 that can then be continued on a regular IEA assessment cycle in subsequent four-year assessment cycles. The availability of data points over several cycles will provide evidence of the progress, changes, and benefits of powerful geography education internationally.

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- B5 Levente Halász, University of Miskolc  
 Living Conditions and Strategies of Emigrant Hungarians in the most Important European Target Countries  
**Living Conditions and Strategies of Emigrant Hungarians in the most Important European Target Countries**  
 Emigration has become a universal life strategy independently from sex, age, social strata, education level, place of birth, socialization specificities or other cultural features. The emigration intention and intensity of Hungarians was lagging behind the neighbouring post-socialist countries' societies where an extraordinarily rapid outflow could have been observed since 2000. Due to the liberalization of EU labour market, moreover, the negative effects of the great financial and depth crisis burdening thousands of Hungarian families led to the intensification of Hungarians' emigration from 2010. Germany, the United Kingdom and Austria are the principal target countries where more than 300.000 Hungarians are living in diaspora. Labour mobility focuses on other economically powerful states as Sweden, Finland, Switzerland, the Netherlands, Belgium, furthermore, some transitional countries such as Poland and Slovakia. Recently – based on official and semi-official estimations – approximately 350.000 - 600.000 Hungarians live abroad and 80-85% of them are employed. The minority are studying at foreign HEIs or living with emigrant relatives. The dynamics of emigration was accelerated between 2010 and 2014, though for two years the process shows signs of stagnation or deceleration. The predictions in terms of different future scenario of migration encounter obscurity as many factors (e.g. macroeconomic situation, bureaucracy, social welfare and health system, quality of education, politics) influence individual and collective decisions. Nowadays migratory lifestyle (eternal, temporary or recurring) is an alternative strategy where the horizons of opportunities widen owing to the complex, multilateral interpersonal networks and the supportive social environment. Thriving emigration jeopardizing Hungarian society (especially the peripheral rural areas suffering from brain drain and social residualization) requires efficient political interventions in order to mitigate negative effects concerning social welfare and health systems, education and state administration. The increasing amounts of remittances comprise 3% of the Hungarian GDP, nevertheless, the country meets the total lack of direct economic development as most of the families expend their remittance for reimbursing debts and increase life standards. Two third of emigrant Hungarians do not plan remigration, moreover, after financial and career consolidation they persuade other family members to leave the country. One third of emigrants perceive migration as an episode of adult life seizing the opportunity for financial empowerment. They return back to Hungary with specific family, entrepreneurial, career, patriotic incentives. Numerous factors stimulate migration: macroeconomic instability, low wages, financial recession, quality of education, political dissents, disappointment, apparent poverty, unemployment, hopelessness and uncertainty. On the contrary 4-6 times higher salaries, career opportunities, potential savings, better life conditions, cultural diversity, inclusive societies, advantages of socialization in a multicultural social environment, quality education, intact nature and a reliable future make target countries popular.
- B5 Maria Angeles Rodriguez Domenech, Universidad de Castilla La Mancha,  
**Demography and urban deconcentration processes in medium-sized Spanish cities of the peninsular interior: Ciudad Real as a case study**  
 Geography is a discipline that aims at helping to understand and explain the new and complex processes that occur in the societies. Today, we are witnessing a change in the explanatory model of Spanish urban growth, as demonstrated by the fact that the largest of population growths occur within the vicinity of medium-sized cities. That is, these medium-sized towns are assuming behaviours that are typical of metropolitan cities with models involving urban sprawl towards surrounding municipalities. This new behaviour towards

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Demography and urban deconcentration processes in medium-sized Spanish cities of the peninsular interior: Ciudad Real as a case study

areas, which are rural and sparsely populated, has changed the landscape and the relations that, in a classic manner, had the Spanish middle-sized towns with their territories of direct influence. These villages of rural character are in a difficult situation whereby the loss of identity coexists with the unsustainability of this urban growth system. Geographers understand that case studies approach are necessary for clear up these realities and also for analysing and pinpointing where the growth model of cities should be reviewed. Hence, it study presents a case study of the Spanish province of Ciudad Real, which is located to the south of the Madrid Metropolitan Area, within the region of the autonomous community of Castilla-La Mancha. This area is under the urban sprawl of the south and east of Madrid, in order to illustrate the new relationships that recent urban practices have generated, according to the different stages and degrees of demographic sprawl.

Keywords: Spanish urban growth, deconcentration, Spanish province of Ciudad Real, growth model, unsustainable systems

B5 Stefania Silvestri, Sapienza University of Rome  
Future world citizens: the outcome of the encounter of different cultures and their relocation in the world map following today's migration phenomenon

### **Future world citizens: the outcome of the encounter of different cultures and their relocation in the world map following today's migration phenomenon**

The migration crisis is one of the most defying issues facing the world today, and to study it adequately constitutes an opportunity for the promotion of the positive aspects of encounter of populations in the construction of tomorrow's world citizens.

The application of the Social Representations Theory for the study of such group movements in their geo-cultural context provides an opportunity to understand future world citizens, investigating processes of social inclusion/exclusion in relation to contemporary migratory phenomena.

A key element connected to the migration phenomenon is the need to have a thorough knowledge of geographic dimensions. In our theoretical and methodological perspective, world geography is not simply a "space-place" but a "geo-cultural context" involving a set of interrelated psycho-social scopes evoking iconic-imaginary representations linked to symbols, social memory, national, supranational and personal identity, cultural-normative expectations and feelings related to social representations of "humanity" in a world map landscape.

The aim of this contribution, with the principal actors' direct involvement in the study (migrants, relief agents and receiving communities), is to illustrate an on-going research program in its initial phases which wishes to add to the understanding of some of the psycho-social implications of today's migration and population movements which will determine the citizens of tomorrow. The articulate relation between research lines involving "media" and "field" studies applying specific instruments and methodologies will be shown together with the potentiality of developing policies aimed at social inclusion.

Co-Authors: Annamaria Silvana de Rosa, Stefania Silvestri, Elena Bocci

B5 Beáta Siskáné Szilasi, University of

### **Characteristics of the Dynamizing Emigration Intention of the Hungarian Youth**

Hungarian young generations consider emigration as an alternative life strategy that seizes the opportunity for studying in foreign higher educational institutions or being employed in the receiving countries' labour markets for short, medium or long periods. During



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Miskolc

Characteristics  
of the  
Dynamizing  
Emigration  
Intention of the  
Hungarian  
Youth

the previous decade (since the EU accession) the proportion of Hungarian emigrants increased radically directing international and national scientific interest, moreover, the attention of public policies towards the phenomenon. Recent study endeavours to shed light on the most significant mobility characteristics of the last 10 years putting special emphasis on the youth (age 18-40) – as the most affected age group. Migration process, its influencing social, economic, political, cultural mechanisms, the explanatory factors are in the limelight of many inter- and multidisciplinary research. The demand is increasing on objective and subjective data in terms of migration potential, emigration trends. This particular need led to a 4-year-long project entitled 'Recent Trends of Hungarian Emigration' realized between 2013 and 2016, almost 10 000 respondents were involved into questionnaire surveys and semi-structured interviews both in Hungary and abroad focusing on already settled emigrant Hungarians. Targeted questions aimed at getting to know the specificities (duration, determination, target country, etc.) of their migration potential, the reasons behind the definite decisions, the recent status quo, moreover, the changes of their demographic features in detail. (For the record, recent treatise concentrates on the younger generations which represented 49% of the total number of respondents.)

Since the political regime change the pace of migration has not been as fast as nowadays. According to numerous official Hungarian and foreign statistical data sources, 300 – 650 000 Hungarians are living or studying abroad primarily in Western and Northern European highly developed countries such as the United Kingdom, Germany, Austria, Sweden, Switzerland and the BeNeLux states. The average age of migrants is 29-30, although year by year younger generations tend to leave Hungary for shorter or longer periods. In 2016 no distinction could be made between the number of migrant men and women. Based on our empirical results a 'sinister' phenomenon has been proved. The strength of migration potential and the length of foreign stay correlate; People having weak migration intentions aim to stay a short or intermediate period of time abroad, though the seriousness of their decisions are fragile, however, Hungarian youngsters with severe decisions on emigration aim to leave the country for longer periods or even forever which intention seems to be appalling in prospect and claiming urgent policy interventions.

Migration potential is selective: those social groups are most affected whose opportunities (youngsters, having massive and diverse human capital, adventure-seekers) and constraints (dissatisfied, pessimistic, discriminated social strata) strengthen each other. Crucial push factors are low macroeconomic performance, individual financial problems, depth crisis, impossibility of loan repayment, lack of adequate jobs, disillusionment from politics, uncertainty in future and social conflicts. On the contrary, the developed economic structure, the variety of workplaces and higher educational institutions, inclusive society, the quality of nature, mentality of people turned out as pull factors.

Sharp spatial inequalities could have emerged in the field of the strength of migration potential between Budapest (having the highest ratio of youngsters intend to leave or already left) and the rural countryside, in addition, primarily those residences eager to emigrate who live in post-industrial socialist cities, areas gone through unsuccessful economic transition, underdeveloped rural neighbourhoods near the Eastern and Southern borders and counties characterized by high proportion of Roma social groups. Less affected areas are the Western borderland (nota bene the daily commuting (30-40 000 people) to Austria and Slovakia 'substitutes' emigration) and developed rural countryside where people are employed by the agro-sector.

One of the most urgent problems of Hungary burdened with a great multitude of structural difficulties (aging, lower fertility rate,

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educational attainment lags behind the EU, labour market imbalance, spatial-social polarization, etc.) is the halt/decelerate of emigration. Profound and effective policy interventions must be made in order to improve life perspectives and diminish uncertainty in future in particular to the most vulnerable lower and middle strata Hungarian youngsters.

- C1 Marine  
Matosyan,  
Armenian State  
Pedagogical  
University,  
Problems of  
development  
and territorial  
organisation of  
tourism and  
recreation in the  
Republic of  
Armenia -  
Hrazdan Region
- Problems of development and territorial organisation of tourism and recreation in the Republic of Armenia - Hrazdan Region**
- In socio-geographical studies, a special place belongs to the method of sociological survey. Scientific information obtained through sociological surveys is most plausible, and problems that are difficult to access by statistical and monitoring methods are identified. In the article, the tourist potential of the Hrazdan region of Kotayk marz was revealed by the method of sociological survey. The methodology for the development of the questionnaire of the questions of the sociological survey is based on the current provisions of the strategy of Sustainable Development and Sustainable Tourism. It summarizes the results of sociological polls conducted among the population, presents factors that impede or contribute to the development of the region. The poll revealed that the population is full of information about the resources and tourism opportunities of the region. Analysis of the results of the surveys justifies the desire of the population to turn the region into a tourist destination.
- C1 Kantaro  
Takahashi,  
Tokyo  
Metropolitan  
University  
International  
tourism in  
Nature  
Protection  
Areas: Whether  
there is a need  
for  
internationaliza-  
tion of  
communication
- International tourism in Nature Protection Areas: Whether there is a need for internationalization of communication in National Parks in Germany. International Tourism Impact in National Parks in Germany**
- According to the IUCN criteria national parks aim at protecting the ecological integrity of ecosystems. However, they also aim at providing opportunities for research, education and recreation. National parks, therefore, may be seen as mediators between nature and society. To fulfil this task, national parks need to be able to communicate with their visitors. Since international visits to national parks have increased, communication requirements may have changed. Different cultures and languages may have to be taken into account. This may pose challenges to national park administrations. This paper aims at analyzing the need for the internationalization of the communication in four national parks in Germany. It is based on a statistical analysis of international tourist arrivals according to their country of origin. The data is categorized to some language groups to compare differences in communication needs. Result shows that the visitors from the same language group have few differences with visitors from non-German closest countries in almost of all national parks. From this analysis may be deducted, that excessive foreign language services are unnecessarily at present. However, multi-language services might be necessary to share the knowledge on protection of ecosystem in future.



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in National  
Parks in  
Germany.  
International  
Tourism Impact  
in National  
Parks in  
Germany

- C1 Mihai Voda / Ni Made Ernawati, Dimitrie Cantemir University / Politeknik Negeri Bali, Geomedia's role for mountain route development: Mesehe and Posoiu Waterfalls comparative study
- Geomedia's role for mountain route development: Mesehe and Posoiu Waterfalls comparative study**
- This study discusses a tropical and a temperate forest route development to Mesehe and PISOIU Waterfall supporting sustainable tourism development in Pohsanten Community, Bali, Indonesia and Bistra, Romania. It is a qualitative study using a combination of observation, direct participation and non-structured interviews as data collecting methods. Geo-data was collected during forest expeditions, interactions and interviews with local community members who participate in tourism. Re-establishing the geo-heritage supports sustainability to the people in terms of socio economic wellbeing, promotes legal use of forest and conservation. The study suggests 3 types of products: Village off road vehicle (ORV) recreation, mountain biking, and jungle trekking. It concludes tourism could be a solution to the misuse of natural environment and the forest, brings about socio cultural and economic benefits to the members of the village; thus, sustainable tourism development for Pohsanten and Bistra communities.  
Key-words: geomedia, ORV, trekking, spatio-temporal analysis, recreation.
- C2 Uwe Kraus / Stefani Zecha, Fontys University of Applied Sciences Tilburg / Catholic University
- Authors' perceptions of and practical strategies to writing geography textbooks – the case of Germany and the Netherlands**
- In 2017 across eight countries a study was conducted to describe and compare the authors' perceptions of and practical approaches to writing geography textbooks. The applied questionnaire consisted of questions about educational goals, the value of geography as a subject, the influence of the curriculum contexts, knowledge and expertise for textbook authors and student activity design rationales. During the session the first results of the study with a focus on German and Dutch textbook authors will be presented.



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Eichstätt-  
Ingolstadt,

Authors'  
perceptions of  
and practical  
strategies to  
writing  
geography  
textbooks – the  
case of  
Germany and  
the Netherlands

C2 Yorgos Photis,  
NTUA Athens,  
  
Author  
Workshop –  
how to  
successfully  
publish scientific  
articles and  
books

### **Author Workshop – how to successfully publish scientific articles and books**

This workshop for authors is focused on how to get published in scientific journals and will also cover novel developments in journal and book publishing and book publishing options. It contains useful information on how to create a logical manuscript structure, on an efficient publication strategy, and on successful journal submission. Objective is to give an overview on how to be an effective communicator and some ideas on not only to be published, but also to be widely read in the field. This workshop is especially tailored towards early-career scientists with little experience in journal publishing but can be of interest to researchers of all levels

C3 Jakob Bonnevie  
Cyvin, NTNU -  
Norwegian  
University of  
Science and  
Technology,  
  
Story Map  
application and  
Virtual Reality  
(VR)

### **Story Map application and Virtual Reality (VR) - case study about Nuclear Energy in Science Teacher Education**

The integrated science subject (30 + 30 stp.) in Norwegian teacher education for primary and lower secondary school contains several science and didactic themes. The wide area of knowledge and skills to teach, forces us to find situated engaging cross-subject themes suitable for inquiry based student-active teaching.

In today's ICT-rich society, digital tools together with a socio-cultural thinking could be one of the answers to these challenges. Connectivism can be described as a learning theory where the social-constructivistic approach is meeting our digital age. Connectivism describes every individual that takes part in the learning process as a node in a learning network. Internet is making this landscape of nodes approachable for all, and the knowledge is a result of extracting information and/or self-participation. This approach to learning see the students as resources more than listeners, and makes the knowledge about extracting information, critical judgment and ability to make connections in the network of information more important than remembering facts. (Siemens,

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- case study  
about Nuclear  
Energy in  
Science  
Teacher  
Education

2005.)

One of the challenges of today and the future, for both students and teachers, in context of huge amount of information accessible, is the ability to "sens-making" and "knowledge management" (Brown, 2006). The teachers of today and the future need skills to navigate in the chaos of information, and this navigational skill will be as, or more important for the students than the knowledge itself (Brown, 2006). Story map is our approach to this challenge.

The study is from the second 30 cp. subject for 4th year pre-service teacher education students at Norwegian University of Science and Technology. The main headlines for this subject are "education for sustainable development" and "inquiry based science"; taught through themes in biology, organic chemistry, geology, technology, and science didactics. Our two days case was about nuclear power in a wide context, using different ICT tools. In front of the lessons we developed a Story Map application where we collected relevant information about nuclear energy, radiation, nuclear power stations, accidents worldwide, and impacts on health and environment. By purpose the app. was incomplete, containing tasks to challenge to proposals for corrections, improvements and extensions. The app. was used in student groups of 3-4. In addition the students watched the Chernobyl area in Virtual Reality (VR) through VR-glasses - exploring the sarcophagi, and the hospital and school ruin as it is today. (Cf. van Krevelen and Poelman [2010] for definitions and explanations of the technology.)

The empirical part is a case study containing students' feedback of the teaching, and their mind maps about nuclear energy in front of, during and at the end of two teaching days. In our presentation we will discuss the use of Story Map as a tool of unifying knowledge, and information in light of pedagogical theory about connectivism and information navigation skill. The first analysis of the mind maps from the students participating both days (n=12) is that the majority developed their mind maps to be much more rich at the end of day two, containing a lot of new concepts. In addition we will discuss feedback from students and our own experience with use of VR as a tool for hands-on knowledge without visiting a geographical place. How can such teaching environments enrich the teaching to make sense, and the teaching situation to be situated, as well as stimulate to reflection; and could this approach possibly save teaching resources?

Keywords: ICT, Story map, Virtual reality (VR), Teacher education, Mind maps

Co-author: Jakob Bonnevie Cyvin

C3 Eleni Gnesouli,  
National and  
Kapodistrian  
University of  
Athens

### **Pilot application of Scratch in the process of teaching middle school students about the natural phenomenon of earthquakes**

One of the most exciting technology "inventions" to come about in recent years in education, include the Scratch application, created by MIT. The use of Scratch in the classroom has - according to the literature data - positive effects, either in programming (ie. students create stories, games, animations, etc.), or in the field of various school subjects (ie. physics, chemistry, geography etc.).

Pilot application  
of Scratch in the  
process of

Although there is a big active community of scratch users (students and educators), little work have been done in the field of the research and the results that scratch has as a medium in teaching other subjects (Geography in our case). This paper presents the results of a research that took place at the Pedagogical Department of Primary Education of the National and Kapodistrian University

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teaching middle school students about the natural phenomenon of earthquakes

of Athens. Researchers referred to the phenomenon of earthquake as a case study in order to investigate the potential that Scratch may have in teaching concepts of Geography in secondary school and to calibrate the effectiveness of the activities (simulations, games, etc.) designed by themselves using Scratch to teach the phenomenon of earthquakes in an alternative way than the one it is suggested from the programme of study and the textbooks.

Co-authors: E. Gnesouli, L. Galani, E. Mavrikaki.

C4 Velt Maier /  
Johanna  
Mäsgen,  
Universitäten  
Köln und  
Münster,

### **Pressure and release? How centralized exams inhibit innovative teaching practice and how observation sheets help to improve teaching**

In this presentation, we focus on two studies about a) the impact of centralized geography on teaching practice and b) observation sheets in the field of spatial planning as a tool for teacher trainees.

a) The longitudinal analysis of centralized examination papers in five federal states of Germany shows a high grade of standardization within the federal states, some variables even demonstrate that the standardization increases over time. The second study analyses, how teachers are affected by these centralized exams. The main result is, that the standardization causes various teaching-to-the-test-effects, because the examination papers are becoming more and more predictable.

b) With classroom observation, we can analyse teacher behaviour. Furthermore, we are able to examine the observer by analysing the construction of the observation sheets. The results of observation sheets are interesting to understand how lessons work. The reflection about the construction of the observations sheet is enlightening in respect of perception skills. In this presentation, we show results how geography teacher training students improve observation sheets about spatial planning.

Pressure and release? How centralized exams inhibit innovative teaching practice and how observation sheets help to improve teaching

C4 Nina Scholten,  
Universität  
Hamburg,  
Development of  
a Video-Based  
Instrument to  
Grasp  
Geography-

### **Development of a Video-Based Instrument to Grasp Geography-Specific Noticing**

The teacher has a high impact on student learning. Thus one task of educational research is to identify the factors that constitute a professional teacher. Studies usually concentrated on teachers' dispositions such as knowledge facets (CK, PCK, PK) or teacher's beliefs, motivations. However, the relation between teachers' dispositions and their performance in class remains elusive, though understanding this link seems influential on student learning.

One process which links teachers' dispositions to their performance is their noticing during instruction. The classroom is a complex situation, in which the teacher is exposed to multiple stimuli. He/She has to notice relevant aspects - while dismissing others - interpret those aspects and consider an instructional response. To model teacher's noticing we draw on the conceptualization

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- Specific Noticing “Noticing” (Sherin, Jacobs & Philipp, 2011) and the “PID Model” (Blömeke, Gustafsson & Shavelson, 2015). Besides multiple aspects of classroom management, a geography teacher needs to notice subject-specific aspects, which are especially relevant for subject-specific learning.  
The final aim of the research project is to assess the development of pre-service teachers` subject -specific noticing during university in a pseudo-longitudinal research design. This requires substantial preparatory work. Besides the conceptualization of subject-specific noticing for geography teaching, the development of an instrument to explore this competence facet for geography teaching is required. In this context one promising instrument are video vignettes. We constructed staged video vignettes which represent typical geography classroom situations. We conducted a qualitative study, in which the testpersons were asked to stop the vignette whenever something attracted their attention and elaborate on their noticing. The answers are audiotaped, transcribed and analyzed by qualitative content analysis (Mayring, 2015) to explore the nature of geography-specific noticing. Preliminary results are presented.
- C4 Günther Weiss, University of Cologne, Institute for Geography Education  
**Implementation of inquiry-based learning in geography trainee teacher education**  
Problem-oriented, Inquiry-based Learning (IBL) is regarded as a perfect way to meaningful, methodological and reflexive learning from the perspective of a moderate constructivist theory of teaching and learning. Nevertheless, the implementation of IBL in school education faces a number of barriers. Last but not least, this includes the willingness and ability of teachers to generate an authentic, motivating problem, to present it as a research opportunity and to consistently support the research process without anticipating any solutions.  
Implementation of inquiry-based learning in geography trainee teacher education  
In a course at the University of Cologne for the education of students soon teaching science at primary schools (with a geographical focus), the participants were first introduced to the concept of problem-oriented, research-based learning and made aware of the sensitive interfaces in the process of teaching and learning. Subsequently, in small groups the students had to implement a self-selected geographical topic with a primary school class. In a qualitative design, based on audio transcripts of the lessons, the students' actions were analyzed for strengths and weaknesses in the guidance to inquiry learning (e.g., problem introduction, reasoning of research, dealing with students questions). In addition, the participants were asked about their attitude towards research-based learning, the assessment of their own design of an inquiry-based lesson and the perceived benefits of the course.
- C5 Viktoria Bityukova, Moscow State University,  
New Moscow and the old problems of environmental  
**New Moscow and the old problems of environmental development**  
Moscow and Moscow region form a powerful region, the level of environmental tension in which increases throughout the post-Soviet period. The accession of new territories to Moscow was largely explained by the desire to provide a new quality of solving environmental problems. However, it turned out that there are negative trends for these regions, primarily due to the increased impact of road transport and the scale of housing construction. The rapid and multidirectional development of the territory of New Moscow after 2013 led to the formation of areas with different trends in the transformation of the ecological situation.  
A significant part of New Moscow at the time of its entry into the capital can be considered as "reference", relatively clean from the point of view of pollution. However, it is for this reason that the ecological situation changes so rapidly: the number of pollution

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- development sources and the area of continuous development are increasing. As a result, the proportion between transformational and inherited factors changes rapidly in the formation of the ecological situation. It forms three basic types of districts. First, the conditionally clean, left over from the least developed sector of the Moscow region, where today there is an attempt to build a modern type of ecological culture in the form it is understood by the authorities, without interacting with real and potential residents. Secondly, territories neat the capitals, directly adjacent to Moscow and resetting industrial functions. Emissions to the atmosphere have significantly decreased, but pollution from motor vehicles has increased significantly. This type is intensively expanding, wedging in type 1 areas along the main highways, actively building multistage complexes all areas with good transport accessibility. Here the ecological situation is changing rapidly in the process of construction, but construction is proceeding according to new norms and plans, including the development of ecological infrastructure. Between the territories of types 1 and 2, an intermediate type of districts is allocated, to which all uncompetitive functions in comparison with housing construction were dropped. In these territories, the remnants of the Soviet-built agro-industrial complex. The problems are the most acute and multifaceted for these territories: it is most difficult to implement a unified policy, since there are many land users, but there is less money and less attention of the authorities. As a result, these territories develop according to the residual principle: the main focus is on renovation in Moscow, in the nearest belt or to new territories, the most interesting building lobby. As a result, the change in the status of the New Moscow territory gave acceleration to the development of the territory, but did not give a new quality of development. Ecologically clean technologies of the post-industrial city are still expensive, a new ecological culture is only painfully formed, and the affiliated territories are again used for building, recreation and storage of waste.
- C5 Pavel Kirillov,  
Moscow State  
University  
New Moscow in  
Moscow  
metropolitan  
transportation  
and commuting  
scheme  
**New Moscow in Moscow metropolitan transportation and commuting scheme**  
The paper is focused on transformation of transportation and commuting pattern after its annexation to Moscow. It covers variety of information sources from different sources such as public surveys, mobile networks subscribers' migrations, various transportation monitoring data and official statistical and public services data. Since 2012, the 'New Moscow' project surpassed slow changes in the commuting patterns until 2015 when while the transportation environment and network had developed and relatively significant commuting flows had formed. Even then, evidence of growth was revealed just over 1-2% against previous level. Now both in inner (adjacent to Moscow) and outer belts new residential housing along with intense development of transport scheme lead to major transformation of the commuting pattern. Under new administrative status of New Moscow, the changed transportation accessibility is to be considered as the main factor forcing major transformation of the citizens travel pattern. Administrative factor is still influencing both directly and indirectly the newly generated flows: through housing, new investments attractors and thus allocation of jobs, difference in incomes and housing rent etc.
- C5 Natalia  
Koldobskaya,  
Moscow State  
**The problem of waste utilization in Russia: past, present and future (example of Moscow Oblast and New Moscow)**  
One of the peculiarities found in the interaction of the city with its hinterland is how the system of collection, hauling, and processing

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University

The problem of waste utilization in Russia: past, present and future (example of Moscow Oblast and New Moscow)

of waste operates. Already in the early 2000s the quantity of wastes from Moscow located in the landfills and dumps of Moscow Oblast' exceeded the amount of wastes produced in the oblast'. In 2010 one of Moscow Oblast's ecological problems was the presence of more than 50 landfills, the capacity of which was 80% exhausted, and some 1500 unsanctioned dumps. Within Old Moscow there were four garbage-incineration plants, which burned one-third of Moscow's garbage. About 5% of the household solid wastes are recycled and the rest are buried in Moscow Oblast'. Today the situation regarding wastes in Moscow and Moscow Oblast' is changing, but not for the better. Old Moscow alone annually produces about 25 million tonnes of wastes from production and consumption (household, industrial, construction, etc.), while the new territories account for about an additional 90,000 tonnes. Every year this figure increases by three percent.

Troitskii and Novomoskovskii administrative okrugs currently are relatively minor producers of household solid waste, but in ten years they will catch up with Old Moscow's districts. It is especially important to consider the rapid pace of residential construction in New Moscow. Moreover, now there is the question of where to take the construction waste that will be generated by the destruction of buildings in Moscow in accordance with the "renovatsiya" program, which will demolish low-quality five-story buildings. It is possible that this waste will end up in New Moscow.

In July 2011 authorities in Moscow and Moscow Oblast' signed an agreement concerning production and consumption wastes which considered setting up inter-regional complexes to recycle wastes. Since 1 January 2017 it has been illegal to bury wastes containing useful materials (plastic, glass, ferrous-metal scrap, recyclable paper). Such wastes constitute up to 60% of household solid wastes. The territorial schema for Moscow Oblast' for 2019 suggests creating the facilities to remove useful materials from garbage. At present for practical purposes they do not exist.

After annexation Moscow found that four landfills came with the new territories. Currently they are closed and undergoing reclamation. In addition, about sixty unsanctioned dumps turned up in New Moscow. There is no plan to open new landfills or other facilities for recycling in New Moscow, and so it is difficult to say how the problem of dealing with wastes will be resolved.

C5 Alla Makhrova,  
Moscow State  
University,  
Metropolitan  
Integration of  
New Moscow:  
Effect for Labor  
Market

### **Metropolitan Integration of New Moscow: Effect for Labor Market**

The 'Centre-periphery' model remains a meaningful feature in labour market distribution both for the Moscow metropolitan area as whole and locally for municipalities of New Moscow. Apart of that the factor of 'inherited' localization of jobs within the Moscow metropolitan area, mobile networks operators' data on subscribers' migration show.

Fourteen out of twenty one New Moscow municipalities are predominantly residential ones, and these districts form only a small part form their local labour markets while allocating significant incoming commuters flow from elsewhere. Due to relatively weak transport accessibility of 'Old Moscow' still typical are reverse suburban flows with high levels of local employment at place of residence. Mobile networks data estimate number of jobs in many New Moscow municipalities much above the official indicators. It is revealed that this is due to high number of temporary population being employed at numerous construction sites, thus forming a significant "false" employment in the area.

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- D1 Ni Made Ernawati, Politeknik Negeri Bali, Mesehe Waterfall for Community Tourism: A prospect for development
- Mesehe Waterfall for Community Tourism: A prospect for development**
- This paper discusses a prospect of community tourism development wherein Mesehe waterfall and its legend related to the Pasatan temple becomes the main tourist attraction. Pohsanten village is located in the Western part of Bali is also outstanding for its special flavour cacao bean product. The tourism establishment process has been started these for example: human resource development, upgrade of existing facilities, and introducing the village on a website is in progress; yet some other aspects of development program including the provision of tourist services still need to be addressed. The article is developed based on direct participation in the project, interview with locals involved in the development, as well as observation. In general, Mesehe waterfall as tourist attraction, could be experienced in three different ways: Village motor-biking, Fun trekking, and Trekking for well-trained geotourists. The community intends to re-establishing the heritage practice of purification to the waterfall combined with tourism activities is projected positively; it supports the conservation of natural environment, promotes the legal use of forest and benefits local people in terms of socio economic wellbeing.
- D1 Éva Máté, University of Pécs, Perforation tendencies of rural 'others' and the production of isolated localities: mobility of the deprived in Baranyai hegyhát, Hungary
- Perforation tendencies of rural 'others' and the production of isolated localities: mobility of the deprived in Baranyai hegyhát, Hungary**
- Rural restructuring processes especially in remote areas led to the fragmentation of space and society. The new spatial order of job opportunities and parallel, the loss of local workplaces forced residents in rural spaces to reach a higher mobility and with this, start to commute. Although, a high amount of village residents could conformed to the new spatial practice, some of them could not. With the different levels of mobility (besides many other phenomena) the fragmentation of local communities started connected with a differentiating financial background. We assume, that the lack of mobility compared with deprivation can cause isolation in rural space. Isolation means in these terms, that some groups have a critically narrow space for everyday use according to their financial chances and lack of other opportunities. When the majority of a settlements society is affected by isolation, it would be necessary to call the phenomenon as the perforation of space. In this paper, we are focusing on the survey results of a Hungarian rurality, examining the responds of people with critically low income, as rural 'others'.
- D1 Judit Péterfi, University of Pécs, Cultural Heritage in the
- Cultural Heritage in the Central European Region - Castle Utilization in Hungary**
- The cultural heritages are playing an important role in the tourism sector nowadays. The European Union recognized it and started to found programs, aiming at one hand to preserve the cultural heritages and on the other, to fill them with functions and to attract tourists. The programs are in cooperation with the governments of the member countries. In this paper, I will examine the utilization of the castles, as a main part of the built cultural heritage. The Central European region and Hungary are filled with historic castles, and



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Central  
European  
Region - Castle  
Utilization in  
Hungary

they are very attractive tourist destinations. My main research area is Somogy county, I visited the castles, made interviews with the municipality leaders, and analyzed the castles from different perspectives. I will compare their utilization with the castles taking place in the Hungarian National Castle Program.

D1 Stefanie Zecha,  
Catholic  
University  
Eichstätt-  
Ingolstadt,  
  
Climate change  
in Ladakh  
(India) - an  
empirical study

### **Climate change in Ladakh (India) - an empirical study**

Ladakh is a region of the Indian state of Jammu and Kashmir. It is also known as "little Tibet" because of its situation in the Himalayas and cultural similarity to Tibet. At an altitude of 3,500 meters above sea level, it is one of the highest areas of the world to be populated.

Ladakh is characterized by extreme aridity and vegetation-free dry steppe. In the short summers, the temperature rises to 30 degrees, in winter it falls to minus 40. More than anywhere else, people here rely on using meltwater and precipitation to irrigate their few fields and produce drinking water. Climate change is already being felt in Ladakh, and precipitation has fallen drastically. The local population also reports that many lakes have become dry in the last decades and have even become salt lakes and thus can no longer be used as a source of drinking water. Ladakh is thus threatened in the long term by a lack of water. In spite of this, it appears that little is known about climate change awareness in Ladakh. Out of this initial situation arose the question of what attitude the population has on the topic of climate change. An empirical questionnaire study was carried out to answer this question. The questionnaire by Taddicken / Neverla (2017) was used as a basis. They used a three-component model from social psychology, which was also included in environmental awareness research, to record attitudes towards climate change. The first component captures the factual knowledge of this complex topic. The second component is the awareness of climate change-related issues and the concessionary component about the willingness to take responsibility for climate change and the willingness to act towards climate-friendly behaviors. There are also other influencing variables, such as gender, education and knowledge levels. The questionnaires were distributed to teachers in Ladakh. The presentation presents the main results of this study.

D2 Bertrand de  
Foucauld,  
Contrib'City  
  
Contrib'City: an  
adaptable and  
local approach  
to improve

### **Contrib'City: an adaptable and local approach to improve homeplaces**

Specialized on the questions of local policies, I created the [www.contribcity.com](http://www.contribcity.com) platform to concretize several years of research in this domain.

Several elections in Europe and in the USA had showed citizens were expecting their leaders to focus on the local scale, compared to a more global political position that was hold up to 1999 and from 2002 to 2007. After having demonstrated that a down-to-top policy was more humanly and technically efficient for preventing social risks (Hamnett 2004, GRAFMEYER 2005, IMRIE, LEES & RACO 2010, de FOUCAULD 2011), or environmental ones (SALOMON 1997, de FOUCAULD 2013 & 2016), than a more hierarchical



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homeplaces

management, I realized that the creation of a platform dedicated to local territories and to their inhabitants was needed. This tool would base itself on both on-the-field experience and theoretical research. In this context, with a group of partners who for each of them had lived in several countries, I launched Contrib'City (CC) which offers to the inhabitants a way to share their ideas and experience about their daily life and thus to improve their local territories. CC wants to be a participative tool of local policy. However, from the very beginning, CC project has stretched between openness and safety, and had constantly to deal with this debate, may it be in human or technical terms. CC team's answer was to dedicate itself to Proximity and to Freedom, with a territorial division approach based on three scales: local, regional and continental.

Co-author Mr Dharmendra Bhaskar

D2 Rafael de Miguel González, University of Zaragoza & EUROGEO,

### **Youthmetre: from ArcGIS Online to Geocitizen as spatial representations for increase youth digital participation**

YouthMetre project aims to support EU Member States, municipalities and regions in carrying out effective policy reforms in the field of Youth, in line with the indications provided by the EU Youth Strategy and according to the priorities perceived by its target population: young Europeans. For this YouthMetre project provides an effective methodology and tools to measure and represent (by graphs and maps) 54 social and spatial indicators agreed by the EU Youth Strategy.

Youthmetre: from ArcGIS Online to Geocitizen as spatial representations for increase youth digital participation

This paper will show how this cartographic and geographic product has been created, first using a dashboard and a story map toolkit in order to visualize spatial indicators. Nevertheless, first part of the project has shown that the real interaction between young and policy makers must be increased. Thus, Geocitizen has been implemented to guide spatial citizenship and to integrate participatory community work into existing decision-making structures

D2 José Jesús Reyes Nunez, Eotvos Lorand University,

### **Testing collaborative cartography in a Hungarian Secondary School**

The year 2005 is considered by some specialists a milestone date in the history of cartography, when the public map-based services appeared on the Web. Firstly services like Google Maps and Google Earth, and later others as Open StreetMap were used by tens of thousands of people for varied daily tasks (search for a building, finding an address, etc.).

Testing collaborative cartography in a Hungarian

In the last years research projects were developed in manifold application areas, including teaching activities in Elementary and Secondary Schools. Inspired by these projects, authors organized a research on the role that can play collaborative cartography in the support of the Geography teaching. The idea was tested in a Secondary School in Budapest, counting with the participation of a 9th grade group formed by 31 pupils (age 14 to 16). The survey was divided into three parts: a short questionnaire of three questions

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Secondary  
School

to measure their knowledge on map-based services on the Web; a presentation to introduce pupils to Google map services in general and specifically to the use of Google My Maps. Finally, a practice was developed to make together a map using this application. Homework was given for the pupils: the creation of their own map on a topic related to the Geography of Water (a unit of the Geography subject learnt by them recently) working in teams of two or three pupils. Thirteen maps were created, which were analysed and evaluated by the authors according to different categories: the use of symbols, colours and layers as well as the grade of detail and accuracy of the collected information. In general, the experience working with the pupils can be considered positive: The maps qualified as high, appropriate and average can be considered not only works of good quality, but also including personal solutions to improve and organize their contents (definition of layers, use of symbols or areas adapted to the specific theme, presentation of multimedia information to complete the map). This research can be considered an introduction to a future, more complex project on Collaborative Cartography for Hungarian Elementary and Secondary Schools. Keywords: Geographical education, cartography, children, Google Maps, secondary school

D3 Edoardo  
Crescini Di  
Montevecchio  
Benedetti ,  
Università di  
Padova, Dip.  
Biologia,  
PPGIS and VGI  
approaches to  
map and to  
model soil  
sealing by the  
application of  
the Biotope  
Area Factor at  
urban scale.  
The case of  
Padua.

**PPGIS and VGI approaches to map and to model soil sealing by the application of the Biotope Area Factor at urban scale. The case of Padua.**

The phenomenon of soil sealing is, at present, one of the most important environmental issue in urban context. By the increasing of concrete surfaces and by the implementation of new buildings and urban infrastructures, soil sealing is directly and directly affecting soil system and related ecosystem services: carbon sequestration, micro-climate regulation, hydrogeological risk mitigation, water and air purification. Provisioning services, such as biodiversity and agrobiodiversity conservation, are affected as well. The soil sealing phenomenon in Italy is presently estimated about 23.039 km<sup>2</sup> (8% of the total surface); the Veneto Region is one of the most affected areas in the country, showing the highest values in the Province of Padua, where the soil sealed is 40,724 ha, which represents the 19% of the whole territory. The city of Padua is one of the 20 most affected municipalities, showing 4,558 ha of sealed surface until 2015, which is almost the 45% of the urban territory. The general aim of this paper is to investigate the evolution soil sealing in Padua and to test an ecological urban index about the permeability of surfaces. The specific aim is quantifying soil sealing at a detailed scale by modelling the Biotope Area Factor Index. Spatial data to map land use and to model soil sealing are based on very high spatial resolution aerial images (20 cm/pixel). Open source GIS software (QGIS) and PGIS/Volunteered Geography (VGI) approaches were combined to perform a participatory mapping and soil sealing ranking in a learning environment, composed by students from Padua's University. In the study area of the Forcellini neighbourhood (300 ha), spatial analyses showed that 44% is completely sealed (BAF Index = 0), while total permeable surfaces cover the 55% (BAF index = 1) of the area. The average BAF index value for the Forcellini neighbourhood is 0.56.

The use of very high resolution images and a PPGIS/VGI approach to analyse and quantify soil sealing in detail showed the importance to implement remote sensing and GIS-based analysis to monitor land use changes in urban context."

Co-authors: Edoardo Crescini, Francesca Peroni, Stefano Brugnaro, Guglielmo Pristeri, Daniele Codato, Salvatore Eugenio

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Pappalardo, Massimo De Marchi.

- D3 Ádám Kertész,  
Research  
Centre for  
Astronomy and  
Earth Sciences,  
Hungarian  
Academy of  
Sciences ,  
  
Landscape  
aesthetical  
evaluation of  
Hungary by GIS  
methods

### **Landscape aesthetical evaluation of Hungary by GIS methods**

The main objective of the paper is to create a useful and easily understandable map series for decision makers. GIS based analyses were applied as an appropriate tool for database development an analysis, as well as for visual representation. The assessment of a landscape from aesthetical aspect is a difficult task as the term of the aesthetical value is subjective, it depends very much on the individual person's opinion. Because of this strong subjective involvement a baseline concept is needed. The degree of naturalness is applied as a baseline in this paper.

Three landscape characteristics were selected to represent landscape diversity: forest cover, water surfaces and relief. Artificial surfaces were also involved in the analysis as elements decreasing the naturalness of the landscape. The preparation of the map series was performed in three phases: natural landscape components, artificial landscape elements and the assessment of agricultural areas from the aspect of landscape diversity. The area of settlements was excluded from the survey.

The main result is the map showing the areas with various landscape aesthetical values of the country. The evaluation of this map leads to the following conclusions. Looking at the whole area of Hungary naturalness is dominant and the objects destructing the positive esthetical characteristics occur only locally. Future research tasks include a more detailed analysis of the diversity of agricultural areas, the investigation of the relationship between aesthetical values and ecosystem services, proximity analysis around lakes and rivers to delineate the areas where proximity together with other aesthetical values lead to outstanding aesthetical values. The map series can be applied for the assessment of biodiversity and ecosystem services and for decision making in land use policy, with special emphasis on tourism and recreation.

Co-authors: Ádám Kertész, Boglárka Balázs, Melinda Pálinkás, Szilárd Szabó, Adrien Tóth

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- D3 Yorgos Photis,  
NTUA Athens,  
  
BumpTRACER:  
A WebGIS  
smartphone-  
based sensing  
platform, for  
collecting,  
analyzing and  
mapping crowd-

### **BumpTRACER: A WebGIS smartphone-based sensing platform, for collecting, analyzing and mapping crowd-sourced road anomalies data.**

Road pavement anomalies are a major problem in passenger and freight transportation through road network. Data collection of anomalies is an important process, required for pavement repair by the competent authorities. Moreover, the geographic information could be useful for spatial association of pavement anomalies with other variables and furthermore, for route planning by drivers. This paper describes Bump Tracer, a crowd-sensing platform that consists of a smartphone application for collecting data of road anomalies globally and a Web Geographic Information System (Web-GIS) for map viewing and analyzing. The Bump Tracer application uses accelerometer and GPS data to detect pavement anomalies in real-time, with efficient algorithms. Data is sent to a central server, is being processed and stored in a Database and it is imported to the publicly accessible Web GIS. Users can view information of each pavement anomaly, as long as arithmetic information and statistics about the whole road network recorded. In



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sourced road anomalies data.

addition, they can filter pavement anomalies with specific criteria and view arithmetic information and statistics about areas they select.

Keywords: pavement anomalies, Web GIS, mobile crowd-sensing, accelerometer Co-author: Konstantinos Triantos

D3 Madhu Rao,  
Bridgewater  
State University,  
Using geospatial  
technologies to  
assess the  
impacts of small  
hydro power in  
Himachal  
Pradesh, India

### **Using geospatial technologies to assess the impacts of small hydro power in Himachal Pradesh, India**

Achieving energy access is critical to empowerment of the "bottom of the pyramid" in India, which includes the rural poor, women and children. Small hydro power (SHP) projects contribute to environmentally friendly and sustainable rural development in India. To expedite the production of power, the Indian government has promoted private enterprises to initiate the production of power on BOOM (build, own, operate and manage) basis. As result of these policy measures in recent years, SHP projects have mushroomed in the mountainous regions of India, wherein natural run-of-the-river streams could be harnessed for power production in a cost-effective manner. Remote sensing technology is one powerful tool to examine land use and land cover changes over time and across scales of analysis. This paper analyzes the impact of small hydro power in the Ravi river basin of Himachal Pradesh, India. Applying supervised classification technique, five land use classes were delineated, namely, river and water bodies, dense forest, agriculture/current fallow land, open vegetation, and snow/ice cover. From satellite images, temporal changes of land use and land cover over a period of twenty years from 1989 to 2010, the impact of hydel projects in transforming the rural landscape into models of sustainable development is analyzed while providing the much-needed power for economic development. Our paper concludes with reflections on how sustainable SHP development in the Himalayan region of India has lead to rural development and hence progress of the people. The implementation of hydel projects, however, is a complex undertaking and if not properly managed and controlled, can lead to serious negative impacts on the environment and the local economy. Care needs to be taken not to upset delicate ecosystems and endangered species throughout the Himalayas. Provisions need to be made to ensure that indigenous people are not displaced or negatively affected. Unfortunately, there is little government oversight on such issues and the question of the overall efficacy of hydropower in the Himalayan region has yet to be determined.

D4 Valerian  
melikidze, Ivane  
Javakishvili  
Tbilisi State  
University,  
Developing  
Human-Nature  
Interaction  
Conceptual  
Framework for

### **Developing Human-Nature Interaction Conceptual Framework for Teaching Development Related Disciplines at University Graduate Level**

This is the third in the series of presentations, which deal with development of core definitions and concepts for teaching various subjects of Human Geography at university graduate level. First such presentation, dealing with globalization and development was made at EUROGEO Conference 2016 in Malaga (Spain) and dealt with globalization and development, the second was made at the 2017 Annual Meeting of the American Association of Geographers (AAG), in Boston, (Ma, USA) and was devoted to modelling "human society". The current presentation deals with conceptual framework (and associated terms and definitions) for teaching human society-natural environment interaction problems as well as defining sustainable development as indispensable part of such interaction. As usual this is based on systematic approach bearing in mind that this may help to avoid rather obvious traps of misinterpretation of concepts presented as well as distance ourselves from various ideologically "loaded" ideas. The core idea of such

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Teaching  
Development  
Related  
Disciplines at  
University  
Graduate Level

conceptual framework is that from the practical standpoint, there are no so called environmental problems, in a sense, that they originate, become evident and can be solved inside natural environment. In the vast majority of cases of human-nature interactions, the chain of events starts within human society, triggered by problems of societal development (economic, social, etc.). These problems may then be imposed on nature, either accidentally or deliberately, causing changes there. Afterwards, this chain of events may cause feedback effects on society, presenting what resembles an absolutely new set of problems that are perceived as environmental ones. Interaction with nature does not create new problems; it just makes evident problems already existing in human society.

D4 Nikolaus  
Repplinger,  
Universität zu  
Köln, Institut für  
Geographiedida  
ktik,

### **Multilingual practices and experiences of pupils as potential for geography education**

Multilingual  
practices and  
experiences of  
pupils as  
potential for  
geography  
education

In 2017 one third of all pupils in Germany have a migration background due to current and past immigration movements (DIPF, 2016, p. 161). This development leads to a multilingual setting in German schools and beyond. However, the different languages are hardly used in geography education, since, due to curriculum standards, the main language is German and the lessons are mostly taught monolingually (Gogolin, 2016).

There are two sides to this: First, pupils with migration history need to be supported in order to allow them to have success in the German school system and to establish integration. Second, the different languages might offer potential that could be used in geography education for an empathic and appreciative acknowledgment of the languages (Budke, 2017). In particular for geography lessons, the opening up to multilingualism can - so the hypothesis of this work - bring several advantages: In the context of the subject-related, situational and pupils-focused approach of multilingualism, the multilingual skills of pupils shall be supported and expanded. Simultaneously, the acquisition of language awareness through translation tasks and codeswitching exercises might support the identity-related and geographical education process. Furthermore, multilingualism of the pupils could potentially be used for the sensitive integration of multiple perspectives in geography education. Authentic sources from different countries could be integrated in the classroom in order to deal with them on a reflective and evaluative basis in terms of, for instance, spatial representations.

The aim of this article is to present the results of a survey on the multilingual practices and experiences of pupils with migration background in German schools. Furthermore, it should be shown to what extent multilingualism is currently practiced in geography education. The results should strengthen the legitimization of the debate of the integration of multilingualism in geography education. Keywords: multilingualism, multilingual practices and experiences of pupils as potential for geography education, Geography Education

D4 Dimitra Tsakou,  
University of the  
Aegean,  
Detection of

### **Detection of Emotional and Psychological Reactions and Impacts to Children after an Earthquake. Study Area: Lesvos Island**

The main goal of this research was the approach and recording of the emotional reactions of secondary school students and the possible impacts on their behavior after a major incident. This incident was the earthquake size 6.1 R that hit Lesvos island at June

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Emotional and Psychological Reactions and Impacts to Children after an Earthquake.  
Study Area: Lesvos Island

12, 2017, resulting a strong sense of it to the island inhabitants and the total destroy of a village (Vrisa, Polychnitos). More specific, the objectives of the research are: the understanding of students' feelings, the disclosure of psychological impacts to them and the possible actions in the context of education. Moreover, the raising public awareness of the impacts and disturbances that arise, in order to take the appropriate measures of prevention and rehabilitation. The sample of the research was 133 male and female high school students from 12 to 17 years old, from Mytilene. The research was conducted with three different research tools: using a questionnaire, students interview and drawings. With the questionnaires were collected students' demographic data, knowledge about earthquakes as well as their attitudes before, during and after the earthquake. With the interviews were collected students' points of view concerning government and local authorities' actions for the local people of the destroyed village. Finally, students drawing were used for expressing students' feelings on this incident. The results of this research showed that students' knowledge for earthquakes were quite encouraging, provided by the school. A large percentage of respondents stated that they worried during the earthquake, but they remained calm. Additionally, no damages or injuries are reported, to their houses, while almost 80% have surpassed what happened. The media confused them and made them worried about possible post-earthquake activities. Finally, it was observed that the majority of the students represented the village that was destroyed, while they feel sorrow for the people who lost their houses even though they were not affected.

Co-authors: Klonari, A. and Tsakou, D.

D5 Marcell Farkas,  
University of Pécs,  
Geographical analysis of complex educational and forced migration tendencies: the case study of Nigeria

### **Geographical analysis of complex educational and forced migration tendencies: the case study of Nigeria**

The internal and intracontinental migration is still very important in the case of Africa. However, the ongoing demographic boom and the increasing mobility of the young population are pushing more people to seek work and educational opportunities in other countries as well as refuge from increased violence. Nigeria is a good example of any kind of migration because there is a significant number of Nigerian international students in for instance the United States or in the United Kingdom, but educated workers are living in other parts of Europe and in the Gulf states too. However, the number of asylum seekers from Nigeria was also the highest in the year 2017 in the European Union. Therefore, this study is aimed to analyze both the internal and international movements in Nigeria from a geographical perspective. The research gives an overview of two very dissimilar movements, namely the educational and forced migration, showing the inequality and complex socio-economical differences among Nigerian states. The paper's focus is on an empirical case study of Nigerian international students in Hungary to measure their impact in a certain EU member state.

Keywords: Nigeria, educational migration, forced migration, geographical analysis, Hungary

Co-Author Zsuzsa M. Császár

D5 Csaba Ilyés /  
Daniel Orosz /  
Zsuzsanna  
Dabasi Halász,

### **The characteristics of mobility among high school students and college students in post-socialist countries**

The evolution of a country's mobility pattern is influenced by, among other things, the way in which the former post-socialist institutional structures were transformed (Hárs, 2015). In Hungary the post-socialist past - operating with a strong Soviet influence



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University of  
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The  
characteristics  
of mobility  
among high  
school students  
and college  
students in post-  
socialist  
countries

through command-line economy until 1989 - had an impact on the current young generation as well. It is an interesting question and worth analyzing how parents raised in the socialist system influence the mobility of their children, who in turn are growing up in a completely different - market-driven - economic and social environment. In the generation of the parents, international mobility and studying abroad of young people was not a common opportunity. The question is whether this is a hindering factor to the mobility of young people today. Are parents more negative towards mobility or the opposite case is true meaning that parents strongly support their children's mobility as a viable and achievable goal? We would like to analyze the issue of whether and if yes, how that the legacy of the socialist past and of the regime change influence the mobility of young Hungarians a today, as opposed to other non-transition European countries.

D5 Maria Angeles  
Rodriguez  
Domenech,  
Universidad de  
Castilla La  
Mancha,

Geography  
answering the  
new  
demography  
and urban  
deconcentration  
processes in  
medium-sized  
Spanish cities of  
the peninsular  
interior; Ciudad  
Real as a case  
study

**Geography answering the new demography and urban deconcentration processes in medium-sized Spanish cities of the peninsular interior; Ciudad Real as a case study**

Geography is a discipline that aims at helping to understand and explain the new and complex processes that occur in the societies. Today, we are witnessing a change in the explanatory model of Spanish urban growth, as demonstrated by the fact that the largest of population growths occur within the vicinity of medium-sized cities. That is, these medium-sized towns are assuming behaviours that are typical of metropolitan cities with models involving urban sprawl towards surrounding municipalities. This new behaviour towards areas, which are rural and sparsely populated, has changed the landscape and the relations that, in a classic manner, had the Spanish middle-sized towns with their territories of direct influence. These villages of rural character are in a difficult situation whereby the loss of identity coexists with the unsustainability of this urban growth system. Geographers understand that case studies approach are necessary for clear up these realities and also for analysing and pinpointing where the growth model of cities should be reviewed. Hence, it study presents a case study of the Spanish province of Ciudad Real, which is located to the south of the Madrid Metropolitan Area, within the region of the autonomous community of Castilla-La Mancha. This area is under the urban sprawl of the south and east of Madrid, in order to illustrate the new relationships that recent urban practices have generated, according to the different stages and degrees of demographic sprawl.

Keywords: Spanish urban growth, deconcentration, Spanish province of Ciudad Real, growth model, unsustainable systems

D5 Abul Salam,

**Population Growth: Meeting the Healthcare Needs of people in Fujairah, UAE**



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UAE University,  
Population  
Growth: Meeting  
the Healthcare  
Needs of people  
in Fujairah, UAE

Change in population is the result of fertility, mortality and net migration and each of these three components have an important implication for the provision of health care services. As the number of population is growing with time the demand on the health care services increase. The availability of hospitals in Fujairah affects the quality and efficiency of the health services and due to increasing population the capacity of the hospitals shows a deficiency of hospitals in that emirate. The primary objective of this study was to analyze the geographic distribution of the hospitals in Fujairah as well to meet the demand of growing population. A systematic random sampling approach was used to collect information from 100 residents using self-administered questionnaires with closed and open-ended questions.

The results revealed diverse opinions that varied widely across their geographic region of Fujairah and people are dissatisfied about the health care services. It also shows that there was inadequate number of hospitals in the study area and the hospitals were incapable to meet the growing of population demand. In conclusion, researchers deduced that there was an unequal relation between the number of available hospitals and the population in Fujairah. Therefore, this study recommends based on results that to solve the problem of the lack of health care facilities bringing all stockholders together to explore ways to provide better services will be better option. In addition, developing appropriate strategies to improve the health care services to achieve the balance in hospitals distribution within Fujairah districts.

E1 Kitti Masinka,  
University of  
Pécs,  
  
Social problems  
in rural spaces  
on the outskirts  
of settlements,  
in Fejér county,  
Hungary

### **Social problems in rural spaces on the outskirts of settlements, in Fejér county, Hungary**

In Hungarian settlement system, especially placed in the Great Plaine regions, we can talk about settlement parts on the outskirts with different sizes and varieties, which are called 'tanya', a special settlement type of Hungarian ruralities. In this research, we are focusing on the problems of society living on these outskirts been examined in Fejér county, Hungary. The population of the outskirts has undergone drastic changes over the last decades, which on the one hand means the demographic decline of local population, on the other hand, the degradation of life quality for those who stayed. In this paper, the problems and the social situation have been examined in this special settlement type, focusing on the role of development opportunities – which seem not to be successful – in the life of the local society. Another important question of the discussion could be, what if these developments could be made, how would they help the people living in such circumstances.

E1 Denis Can  
Teoman, Urban  
Planning  
Institute  
Belgrade,  
  
The importance  
of Geography  
and Urban

### **The importance of Geography and Urban Planning in understanding economic inequalities in small border regions: The case of the CENTROPE Region**

This paper highlights the importance of Geography and Urban planning in determining regional (economic) inequalities. It adds an geographical and planning perspective to enrich a debate mostly based on economic parameters. Understanding difference concepts of urbanization is important in understanding factors resulting in labor migration and economic inequalities. Degrees of urbanization such as peri-urbanization, rurbanization and suburbanism are not only descriptive means of analyzing urban areas, they entail qualitative factors. This paper will analyze these factors based on the CENTROPE region.

CENTROPE is a European Union funded project, which has the goal of establishing and supporting social, economic and cultural



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Planning in understanding economic inequalities in small border regions: The case of the CENTROPE Region

cooperation in the cross-border regions of Austria, Czech Republic, Hungary, Slovakia. It was established in 2003 and involves the provinces of Vienna, Lower Austria and Burgenland in Austria, South Moravia in the Czech Republic, Bratislava and Trnava in Slovakia and Győr-Moson Sopron and Vas in Hungary. Cross border co-operations have existed for a long time, but the analysis has experienced a shift in 2007, when most of the eastern European countries have signed the Schengen Agreement, which enables the member countries to engage in border free exchange with other Schengen Member countries. In the CENTROPE region, Austria is the only country in the CENTROPE Region, which joined the Schengen Zone before 2007.

The focus of regional analysis in the Austrian context before 2007 was heavy on the bordering countries in the West of Austria, which are part of the Schengen zone since decades. The eastern part of Austria has often been neglected in regional focus, because it bordered former eastern bloc countries for decades after the second-world war and it was the border region where Western Europe and Eastern Europe met. This border cannot not only be seen as a solely geographic border, it was a political, economic and social border. It was political, because it was the border between the capitalist west and the communist east. Economically, it was also a border, because Western Europe has a market oriented economy, while the eastern bloc consisted of a centrally planned economy. It was a social border as well, because the citizens of the eastern bloc were restricted in their mobility and often only could come to Western European countries as refugees. This region therefore has a strong historical meaning, remembering the 1956 Hungarian Revolution, and the following refugee streams moving from Hungary to Austria and further West to the UK, US and Canada. The historical contextualization of this border region is particularly essential, because it helps us to understand current economic, social and political streams and conditions in the CENTROPE Region. This paper will focus on two major aspects in the CENTROPE region: 1. The labor mobility within the region. 2. The urbanization processes in the CENTROPE region.

E1 Denis Can Teoman, Urban Planning Institute Belgrade,

The impact of the refugee crisis on urban development: The case of Vienna

### **The impact of the refugee crisis on urban development: The case of Vienna**

The recent refugee crisis in Europe has arguably been one of the biggest moral and political challenges in Europe since the end of the Second World War. The moral challenge was related to the emotions of the societies in the European countries, which were clearly polarized, being divided into 2 groups, the “welcoming” people and the so called “realists”, whose claim were, that European countries cannot and should not take refugees. The discussion about refugees was rather discussed on a very emotional level than on a fact and consensus based level. Austria has welcomed a lot of refugees in the course of its history, mainly from its eastern neighbours and other eastern European countries. However, this stream of migrants has not lead to a welcoming policy of the Austrian government. While refugees are people who fled from their home due to political prosecution or wars with the intention of going back home once their home countries have been stabilized, migrants are people who plan to settle in a certain country without the intention of returning back home. This paper will examine, how urban developments and the infrastructure in Vienna in general respond to incoming refugees and migrants.

E2 Sungjae Choo, Kyung Hee

### **Geographical names as brands of places**

Geographical names are understood as social constructs; perception of name givers, cultural heritages of social groups, and political

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University,  
Geographical  
names as  
brands of places

expression of power groups. This paper, in addition, takes note of the perspective viewing geographical names as brands of places. A geographical name is a brand in nature, in that it distinguishes the place it denotes from others. This paper attempts to figure out how to approach the topic of geographical names as brands; nature of brand and its typology; conceptualization and measurement of brand value; relevance to place identity, and so on.

E2 Myungjin Hong,  
Tokyo  
Metropolitan  
University,  
  
A study of the  
Space  
Restoration of  
Historical Areas  
in Japan Using  
the Historical  
Geography  
Information  
System

### **A study of the Space Restoration of Historical Areas in Japan Using the Historical Geography Information System**

In the field of historical geography, which mainly focuses on the restoration and changes of Japanese historical regions, historical data such as old maps and documents has been used in order to restore the local space of the time. In this study, the map of Nihonbashi area in Tokyo Chuo city was restored based on both historical materials published in Edo era and the restored map from Historic Geographic Information System, referred to a new research trend in the Japanese historical geography field. Tokyo areas in the past had excessive changes in the administrative districts so previous studies showed the limitation of restoring a map through HGIS. Therefore this study has a significance to apply the system that helps restore a microscopic map of the Tokyo area. The practice of regional space restoration will ultimately not only enhance social and cultural understanding of a local area, but will also help future applications for land administration policies and the educational environment.

E2 Maria Angeles  
Rodriguez  
Domenech,  
Universidad de  
Castilla La  
Mancha,  
  
Patterns of  
school  
preference  
about the local  
heritage in  
medium size  
cities of Castilla-  
La Mancha. The

### **Patterns of school preference about the local heritage in medium size cities of Castilla-La Mancha. The case of Ciudad Real**

Understanding of knowledge patterns and the factors that favour or alter this in a city in the child population has interest, because it allows to perform subsequent comparative analysis with groups affected by certain vulnerabilities associated with their place of study in the city.

The objective of this study is, therefore, know the normal patterns of local knowledge of the heritage of the city and clarify the impact of the factors of location, socio-cultural context and age with respect to cultural, social and natural heritage in a school population in a medium size city, capital of the province.

Under the hypothesis that there is a relationship between the location of the school area and closer to it, heritage i.e. subjects will meet and even manifest preferences towards the spaces closer to their usual environment. This has been used a sample of 190 subjects in school age and 10 adult subjects (teachers) during the academic year 2016 / 2017, residents in Ciudad Real, dividing the heritage spaces in 3 areas of confluence.

Data has been developed through two types of questionnaires, physical and on line one, with issues related to economic spaces in the city and establish a relationship between different areas of confluence, for it has been applied the statistical package SPSS version 24.0. The results have been obtained after the analysis of inferences by means of cross-table of the different study variables.

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- |  |   |
|--|---|
| <p>case of Ciudad Real</p>   | <p>Finishing analysis of the results of this study can conclude that it is not predictive in terms of preferences of the worked the city's heritage, this proximity to the centre of studies of the sample students.<br/>Key words: patterns, city, location, schools, urban perception</p>   |
| <p>E2 Mani Ram Sharma / Wosti Amrit, St.Xaviers School Nepal,</p> <p>Rites and Rituals of Rautes in Nepal</p>  | <p><b>Rites and Rituals of Rautes in Nepal</b></p> <p>Nepal is indeed a multi-ethnic, multi-religious, multi-ethnic and multi-lingual country. Most of the communities are nuisance, backward and subsidiary in the country by dint of unequal distribution of natural resources. At least 20 billion people have been living their low level life style (Boodle 1988). Kabilia, caste and indigenous communities are kept under this category. The life of these people is committed in hunting and nomadic activities. As we know that the development process of society has various speed and shapes which resembles the unity in diversity. The process of emerging powerful countries, system of imperialistic practice, population growth and its effect in natural resources, scientific inventions and miracles in communication are the challenges for the nomadic people (Rautes) in the country. The debates have been started, who are Rautes? What do they need? Why are the people messaging wrong issues about them? Why are Rautes famous among other groups? Late Prithvi Narayan Shah stated Nepal is the public garden of four castes and thirty six sub-castes'. Yes! There are many social groups that have been source of revenue from the very beginning. Raute caste is one of them, historically found in mid and far-western regions Terai of Nepal, Known as wandering caste in Asia.</p>   |
| <p>E3 Karsten Einar Gareis, Empirica Gesellschaft für Kommunikations- und Technologieforschung mbH,</p> <p>Can Collective Mapping Help Promote Farm Animal Welfare? A Proposal</p> | <p><b>Can Collective Mapping Help Promote Farm Animal Welfare? A Proposal</b></p> <p>The Cambridge Declaration on Consciousness from July 2012 has given a further boost to an ongoing movement towards changing the treatment of sentient animals, including animals used in livestock farming. Survey research has repeatedly shown that most consumers recognise a pressing need to improve animal welfare in food production. Many have called for more transparency in the way farm animals are treated as a means to allow consumers to make better informed choices about the animal products they purchase. In spite of a range of initiatives from policy-makers, industry and other stakeholders, further progress is urgently needed. To address the challenge, the present paper proposes the application of "commons-based peer production" (Benkler 2006) in the form of collective mapping and tagging approaches. Our interest is, in particular, in the participatory geoweb, which is enabling lay persons to collaborate for the production of thematic maps of any almost kind. There are numerous examples of participative mapping platforms dealing with social issues, but only some of these have reached critical mass. One such successful example is Wheelmap, a map for wheelchair-accessible places (shops, restaurants &amp; cafés, hotels, etc.) to which everyone at any place in the world can add places and rate them by using a traffic light system.</p> <p>Based on the functionality offered by Wheelmap, the present paper proposes the development and implementation of Animap, a mapping and tagging platform which will allow anybody (lay persons as well as activist groups, but also farmers themselves) to map animal farming facilities anywhere around the world, and to annotate entries according to data they have available on factors related to animal welfare. The latter could include the number and type of animals kept, the method of rearing, participation in any schemes to improve animal welfare, and certification organisation (e.g. in the case of organic farming). A further option, albeit potentially a very</p> |



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controversial one, would be to include any information about mistreatment of animals as published by activist groups. As base map I suggest using OpenStreetMap (OSM). The map will also be populated by inclusion of open data where these are available already, such as the catalogue of large-scale livestock farming establishments compiled by activists in regions that are strongly affected by factory farming in Germany.

Main objectives behind Animap are (a) to significantly improve publicly available data on animal farming facilities at local & regional level; (b) to present the data in a format which is highly appealing and as such very suitable for any type of awareness raising activity; (c) thereby to provide the public with heightened awareness of the number, type and welfare of farm animals living in their vicinity; (d) to enable stakeholders operating in the market for animal products and interested in transparency of the production process to utilise the map for their purposes.

There will undoubtedly be sizeable challenges setting up a platform that can fulfil these roles. Given the controversial nature of the issues covered and the fact that farm facility owners might have a strong interest in preventing certain types of assertions about their establishment being openly shared, it will require much effort to ensure that data displayed on the map are of a sufficient quality, and that stakeholders put trust in them. The paper describes how the state of the art in research about success factors for participatory online platforms of the type suggested should be applied.

The ultimate goal of Animap is to contribute to a shift towards farm animals being perceived as “fellow persons” with whom we share a geographical space (such as a region) and for whose welfare we are jointly responsible.

E3 Arnon Medzini,  
Oranim,  
Academic  
College of  
Education,  
  
How can  
geography  
teachers  
exercise caution  
in using and  
teaching from  
manipulative  
digital maps  
designed to  
transmit  
ideological

### **How can geography teachers exercise caution in using and teaching from manipulative digital maps designed to transmit ideological messages?**

Disputes between nations surrounding topics such as territorial ownership, exact placement of borders and labeling the names of controversial places on maps are among the most loaded geopolitical topics in international relations. Indeed, geographic maps play an important role and serve as a tool for shaping the territorial image of a nation and for perceptually mapping its political space. Cartographic representations on maps have become one of the many battle arenas for political struggles surrounding claims of territorial ownership. Hence the way in which political maps are represented to the viewer is of major importance. Territory plays an important role in the founding of nations. Therefore, national identity cannot be separated from attachment to a specific territory. Indeed, national myths are built on this attachment, and maps serve to express this connection. Yet research shows that maps are subjective. Cartographers cannot avoid representing their subjective viewpoints, their own culture or their audience in their maps. Hence, maps can also serve national interests, thus facilitating the use of maps as a propaganda tool that aspires to direct human thinking toward subjective channels determined by the interest of those who have ordered the maps. The choice of how to label local place names on maps is also of dramatic geopolitical significance, for these names are strong symbols of independence and national pride. The names express ownership and affiliation and serve as an ideological tool for establishing the sovereign perspective.

Today the public gets most of its information from digital maps accessible on the internet. This digital environment makes it possible

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messages?

to produce maps more quickly and more easily. These maps are more up to date, include information from new and varied fields and can be stored conveniently and distributed easily at practically no cost. Therefore, they exert a stronger influence on people's worldviews than in the past. Nevertheless, digital maps are marked by social, cultural and political biases and are replete with latent messages that they transmit. Indeed, digital maps have become a new battleground between nations embroiled in territorial disputes, with each party to the dispute presenting maps in line with its point of view.

The average individual, and certainly the average school pupil, is totally unaware of this and is usually incapable of recognizing the manipulations that cartographers employ in preparing maps by choosing what information will appear and how it will be presented. In the schools we teach our pupils how to be cautious of verbal manipulations, but for the most part we lack the knowledge and tools for critical examination of manipulative maps.

The objective of this presentation is to examine how we as geography teachers can identify cartographic manipulations on digital maps in order to teach our pupils to exercise caution in reading and analyzing these maps.

E3 Johannes  
Schultz, Ruhr-  
University  
Bochum

### **Earth observation in the 21st century – Curriculum-oriented integration of Copernicus and ISS data in school lessons**

Earth  
observation in  
the 21st century  
– Curriculum-  
oriented  
integration of  
Copernicus and  
ISS data in  
school lessons

The presentation will demonstrate how curriculum-oriented teaching units are developed based on data of Copernicus' Sentinel satellites and remote sensing sensors attached to the International Space Station. In the light of the Copernicus services, it will be explained, how Sentinel-based teaching units can be developed in order to communicate knowledge about and handling of natural and man-made phenomena in times of global change. It will be shown, how an appropriate integration of Sentinel data in STEM lessons can help to foster methodological and action-oriented competences. Based on intermediality, interactivity, and interdisciplinarity, children are introduced to the world of data behind fancy-coloured satellite images. The activities focus not only on the curriculum of applied subjects like Geography and Biology, but also on Physics, Mathematics, and Computer Science. Exemplarily, different digital learning units will be demonstrated: (1) "Oases – explored from near and far", (2) "Floods – dealing with a constant thread", (3) "Forest as a climate saver". Additionally, the learning app "Aralkum – From sea to desert" will be presented as an example of augmented reality applications and mobile learning. As a next step, immersive virtual reality environments enable children to experience the views of an astronaut and to explore distant worlds. Finally miniature massive open online courses will be introduced as they are going to play an important role in encouraging young students to engage in earth observation and gain media literacy.

Keywords: remote sensing, STEM education, m-learning, Copernicus, propaedeutic learning

Co-authors: Andreas Rienow, Johannes A. Schultz, Henryk Hodam, Claudia Lindner, Annette Ortwein, Fabian Selg

E4 Thomas Jekl,  
University of  
Salzburg  
  
Geography

### **Geography Education and the New Right: Options for Resistance**

In Europe, and probably the world, one of the more recent political shifts has been a swing towards the right (AfD, 'Identitäre'), accompanied by a change in what is seen as acceptable in language. This is true both in the political domain, as well as in the economic and social domain, with nationalism, neoliberalism and de-solidarization being central developments.

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Education and  
the New Right:  
Options for  
Resistance

At the same time, more and more contributions to the development of teaching strategies in geography education are trying deal with these alarming tendencies. This analysis gives an overview about this endeavor and presents examples for teaching practices that offer resistance to the influence of the ideology of the new right. Therefore, it discusses strategies that fruitfully link the use of GIS to activist learning environments that foster the formation of the political subject, to Holocaust Education or to the deconstruction of (spatial) language used by rightwing populists. Geography education, it is argued, has a central role to play to deconstruct current political developments and provide students with democratic and solidary alternatives.

E4 Teresa Sadoń-  
Osowiecka,  
University of  
Gdańsk,

**The geographical idea of the place, the sense of identity, polish educational policy and the meaning polish students about patriotism**

The  
geographical  
idea of the  
place, the sense  
of identity,  
polish  
educational  
policy and the  
meaning polish  
students about  
patriotism

The author investigated geography student's opinions about the role of the patriotism in education and about meanings of that. Their view about patriotism is very stereotypical and superficial- refers only to knowing historic facts and national symbols (the flag, the national anthem, the arms) not for understanding geographical characters of the territory or the place. It can be allarming to teaching geography for the tolerance of difference. For contrast the author analises many kinds of meaning of patriotism in sociological and philosophical literature - another than ordinary meaning of patriotism. All that is the background of consideration about axiological value of geographical education, geographical sense of the place in constructing of the identity and how (and if) this idea of the place is presented in school geography. In the author's opinion the idea of the place and humanistic approaches in geography help in deeper understanding the patriotism and distinguishing it from the nationalism.

E4 Sandra Stieger,  
University of  
Salzburg,

**Ideological educational issues – the case of Austria**

Ideological  
educational  
issues – the  
case of Austria

In Austria, geographical and economic education are embedded in one integrative school subject. Recently a number of empirical studies assessed the economic knowledge of Austrian students. The results of those studies are used as empirical evidence in educational debates arguing for a higher proportion of economics within the subject or for a separation of the subjects. This paper takes issue with the explicit and implicit assumptions regarding economic education, analyzing twelve studies published between 1992 and 2017. The results show that the intention and political interests behind these studies are highly ideological, and mainly linked to the neoliberal political project. The contribution can be seen as a case study as to how political interest groups influence curriculum design, and the methods used. It draws attention to the fact that education for a critical subject and the neoliberal project do not fit, and that education should aim for a more multiperspective approach to economy and society.

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- E5 Martin Hanus / Lenka Havelková, Charles University  
 Teachers' map skill development concepts: a case study of Czechia  
**Teachers' map skill development concepts: a case study of Czechia**  
 A map is a fundamental source of geographical information and teaching pupils how to use a map should therefore be one of the goals of geography lessons. There can, however, be no doubt that the creation of maps and map work should not be considered the main result of a geographic education, but rather a tool enabling the achievement of higher cognitive goals, in particular, the development of geographical thinking. However, the methods of map skill development and the required target level of map skills differs at individual schools. This is especially apparent in an educational environment with a relatively free curriculum, which provides schools and individual teachers with a significant amount of autonomy. The fundamental factor is therefore the geography teaching concept of the teacher, specifically the map skill development concept. It is precisely the identification of the different teacher approaches to this development which constitutes the subject of this study which combines the results of both quantitative (a questionnaire survey) and qualitative (structured interviews) research. The paper therefore mainly seeks answers to these questions: What does the term "map skills" mean to teachers? What significance do they ascribe to these skills in lessons? Which map skills do they mainly develop during lessons? Which didactic materials are used during this development? On the basis of the respondents' replies, the authors have established the following teacher typology: 1) fieldworkers, 2) source-oriented teachers and 3) problem-oriented teachers. The individual types differ substantially with regard to their perception of the significance of map skill development during lessons and emphasise different sub-operations with maps (the reading, analysis, interpretation or creation of maps) and other characteristics. The compiled typology is therefore a contribution to the discussion of only a few studies into this topic. These papers have supplemented a number of studies focused on educational inputs (in particular curricular requirements) or outputs (i.e. the map skill level of respondents) in the area of map skills.
- E5 Duncan Hawley, Geographical Association/Geo Capabilities,  
 Should physical geography in the school curriculum always be taught within a social / environmental issues context?  
**Should physical geography in the school curriculum always be taught within a social / environmental issues context?**  
 Curriculum-making geography teachers to become (critically) active in recontextualising the subject content of the curriculum to engage students in purposeful geography and meaningful knowledge. Questions about the curriculum-making of physical geography have existed for some time, not least whether teaching geography in this day and age of the Anthropocene demands that physical geography in the school curriculum should always be set within a social/environmental issues context, or are there other considerations that are likely to lead to a more responsive and receptive physical geography for all? This paper aims to highlight key arguments for the geographical contexts in which physical geography could be contextualised in the classroom and discuss possible approaches that achieve meaningful engagement for students that can be carried beyond the classroom.

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| E5 | <p>Kristiane Midtaune, NTNU,</p> <p>Differentiated Flipped Classroom</p>   | <p><b>Differentiated Flipped Classroom</b></p> <p>This Spring 2018 we will carry out the introductory course in Statistics and GIS (Geographic Information Systems) as a Differentiated Flipped Classroom (DFC). The aim is to adapt teaching to the individual student (Differentiated) by continuous mapping of students development. We will do this through online discussion, tests, exercises, self-assessment and peer assessments. In addition, the flipped classroom prepare students for seminars with various teaching methods (videos, presentations and tasks). This can provide greater learning outcomes. The seminars are performed in a group-adapted and technological educational room where problem based tasks are given. Quantitative and qualitative analysis of students' learning outcome and preferences of learning methods will continuously be collected through questionnaire and focus group. Some of them will be presented here.</p>  |
| E5 | <p>Marina Pikulenko, Lomonosov Moscow State University,</p> <p>The spread of geographical knowledge: the experience of Earth Science Museum of Lomonosov MSU</p> | <p><b>The spread of geographical knowledge: the experience of Earth Science Museum of Lomonosov MSU</b></p> <p>The Earth Science Museum of Lomonosov MSU was named in order to comprise a wide range of interrelated of the Earth Sciences, which deal with the structure and composition of the complex geospheres, including the geographic environment as a whole, the man's life and activity. The basic principle of the Earth Science Museum's exhibitions is to show a dialectical approach in the studying of the nature diversity on our planet and the history of its development.</p> <p>Over the past half century, the Museum has expanded its educational programs, now they are focused not only on students but also on students and teachers of secondary schools (this training, competitions, conferences, etc.).</p> <p>The traditional form of educational activities of the Museum are guided excursions, but the modern development of the interactive sessions helped to attract more visitors of different age groups. One of the most successful education projects was the project "University Saturdays", implemented for 5 years from autumn 2013, with support from the Moscow Government Department of Education. The project activities are public, any person can choose the point of his interest and pass free registration at the website. The participation in "The Moscow University Saturday" were provided a variety of forms: individual, group and family, that possibility had been previously impossible. The Earth Science Museum of Lomonosov MSU had been prepared and organized very different topics: such as "Moscow megapolis", "Chemical elements in nature", "Evolution of the organic world", "Ocean life", " Learning about animals", " Symmetry in the world of plants", " The names of the researchers on the world map", " In search of meteorites ", etc. Sociological research had been fulfilled in order to create the portraits of the visitors (age, purpose of visit, Group visit or family) and using them for the creating the methodological spread of geographical knowledge with the help of museums</p> |
| F1 | <p>Viola Mária Karsai, University of Pécs,</p> <p>Competing for the town rank as</p>   | <p><b>Competing for the town rank as bottom up in initiative</b></p> <p>Before 1990, most of the Hungarian towns had functional characteristics. After the political transition, more and more settlement could gain the town rank of the permissive legal background and practice, however, those had not always functional features. This liberal practice peaked in 2009, when 22 settlements became towns. Since 2013 there has not been urban reclassification resulting new towns as the government significantly has tightened the criteria system of the process. The 27 year period that has passed provides an appropriate time frame for looking back on to it.</p>   |

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bottom up in initiative

Although it has always been the right of the state to award a town or city rank, the present legislation gives the right to the municipalities to initiate the urban reclassification. A specific bottom up initiative, where local communities, interest groups and the management of the settlement should cooperate efficiently in order to gain the common goal of town rank. A pool of almost two hundred new towns of the past quarter of a century was classified along different criteria and is studied based on different statistics. We have selected measures, which helps to evaluate if the competition for the town was successful and was a good investment of the community.

F1 Kevin P. Martyn,  
University of  
South Florida,

**Creating geographic knowledge with uncooperative data: experience from a housing market study in Tampa Bay, FL, USA.**

Creating geographic knowledge with uncooperative data: experience from a housing market study in Tampa Bay, FL, USA.

In the U.S., the housing crisis of '07-'08 and the subsequent "great recession" has continued to be a significant source of dislocation for about a decade. At least ten million Americans lost a home to foreclosure, while several multiples of that number endured a foreclosure event of some sort. For researchers, the need to chronicle a context-rich, evidence-based accounting of this event remains urgent. This is particularly true in places like Tampa Bay, Florida. The effects of an acute crisis of capital in 2007 were felt the world over, but a majority of the foreclosure events (and lending) which precipitated the crisis were concentrated in just four states in the U.S. "sunbelt": California, Nevada, Arizona and Florida (Strom and Reader 2013, 67). To that end, researchers in the U.S. have access to a wealth of publically available data, if they know where to look (Newman 2010). Meanwhile, broader trends toward the neoliberalization of local governance (Peck and Tickell 2002) have seen a degradation in the availability and ease-of-use of public data, often necessitating expensive subscriptions to private data aggregation services. This article discusses several issues encountered during a recent study of housing markets and foreclosures in Tampa Bay. Results obtained from public data are compared with that of data purchased from a private subscription service. Quality differentials are assessed across the five-county geographic area of Tampa Bay, with significant variation stemming from inconsistencies in geographic data maintained at the local (county) level.

F1 Yorgos Photis,  
NTUA Athens,

**Using spatial analysis and geovisualization to reveal urban fear of crime patterns. First results from survey questionnaire responses collected by a web-based platform.**

Using spatial analysis and geovisualization to reveal urban fear of crime patterns. First results from survey questionnaire

The fear of crime refers to the fear of being a victim of crime as opposed to the actual probability of being a victim of crime (Hale, 1996). The fear of crime, along with fear of the streets constitute what we introduce as urban fear of crime in this research. A web-based multi-platform, which has been designed and developed by the GeoCHOROS – Geospatial Analysis and GIS Research Group, at the National Technical University of Athens, Greece, for the online harvesting, processing and visualization of urban fear of crime data. It features data collecting, statistical and spatial analysis as well as geovisualisation and mapping capabilities in a Web-GIS environment. It supports two main goals through a user friendly, intuitive and easy to use interface. On the one hand, the collection of data by our online survey questionnaire and on the other, the analysis of submitted answers. Analyses can refer to one or more questions while their outcomes and results are provided as one or two-way tables and charts. Respectively, cartographic visualizations of variables (questions) can be 2D or 3D respectively in the form of point density or thematic maps at a respondent or

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responses collected by a web-based platform.

country level. Keywords: fear of crime anomalies, Web GIS, questionnaire survey, geovisualisation.

Co-authors: Pavlos Tsagkis, Yorgos Photis

F1 Effrosyni Tsakiri, TUC, NTUA,

Polis Painting: A complex Mechanism to map City Identity through Fine Arts and Urban Analysis

### **Polis Painting: A complex Mechanism to map City Identity through Fine Arts and Urban Analysis**

Mapping city identity through fine art practices lies within the fields of creative geography, critical cartography and urban visual culture. As Hawkins explains, creative geography is “making space for geographers to recognize the expanded role of artistic and creative practices–based research within geographical scholarship”. Landscape painting has been the primary scope of late ‘80s discussions, a way to relate “the world outside and the pictures in our heads” (Hawkins, 2013, pp. 1-6). Later on, other forms of visual art has been related to creative geography and various scholars have seen art as a way to experience and connect to place and memory (i.e. Lowenthal, Tuan and Relph). Meanwhile, in the interdisciplinary turn of the ‘80s, cultural geography, iconology and semiotics formed the background for the study of cities, called Urban Visual Culture. Cartography played an important role in these developments. Traditional cartography practices have been questioned and replaced by situationist’s psychogeography, mental mapping, soundscapes, and so on, forming eventually the background of critical cartography that criticizes the role of maps to represent objectively space and they propose new mapping practices, related to art. In critical cartography, urban mapping aims to unfold the hidden characteristics of space and to deal with complexities inherent in the urban environment.

In this context, City Painting is an original and innovative proposal of how to map City Identity, by combining fine art principles with urban analysis practices. Polis Painting draws upon the understanding of cities as systems of organized complexity (Batty, Salingaros, Portugali, Jiang, West, etc.). City identity is as complex as a person’s identity, even more, as it depends on myriads of factors. In order to map it, someone needs to use a system that can deal with enormous numbers of data. In the mechanism I use three tools: a) urban analysis and data categorization to evaluate and organize city identity elements, b) narrative construction through semiotic analysis, c) layer superimposition that relates the narratives with city–related expressive means. The product of the mechanism is a complex, multi–layer image that organizes city identity elements into a number of superimposed layers. From the monitoring of the process appears that the visual forms of city identity are not invented by the creator of the image, but rather they ‘emerge’ from micro–procedures and they are formed as possibilities, inherent in the entire procedure, justifying the description of the mechanism as ‘mapping’ that means a bottom–up process.

Keywords: Creative geography, urban visual culture, critical cartography, mapping, place identity, fine arts, urban analysis, complexity

F3 Joseph Kerski, Esri and University of Denver,

### **Assessing the Effectiveness of an 8 year GIS Professional Development Institute for Educators**

An assessment was conducted of eight years of a national professional development institute focused on providing GIS teaching and technical skills for educators, entitled "Teachers Teaching Teachers GIS" (T3G). Through a survey (N=360 (VERIFY; out of 480), the author discovered that the institute met its goals of equipping educators so that they could (1) teach GIS concepts and skills for their

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Assessing the Effectiveness of an 8 year GIS Professional Development Institute for Educators

peers, (2) create GIS-based curricula, and (3) communicate the value of GIS to other disciplines. Over the years that the institute ran in a face-to-face format, the institute reflected broader changes in GIS technology and methods, including the transition from desktop to web-based GIS and the movement to shorter lesson activities. Challenges and benefits of this model of professional development and broader issues of GIS in primary, secondary, university, and informal areas of education were revealed. Strategies to advance the implementation and effectiveness of the use of GIS in instruction were sought and analyzed.

F3 María Luisa de Lázaro y Torres, Universidad Nacional de Educación a Distancia (UNED),

### **University students' perceptions of Murcia and Valencia inner cities**

There are different approaches to inner city perceptions: a visual approach carried out through observation and description, mainly developed by Kevin Lynch; a second approach focused on evaluation and analysis of a city; and a third approach, which integrates the feelings that a space evokes in individuals known as the sense of the place. The aforementioned end up conditioning the behaviour (action-decision) of individuals.

University students' perceptions of Murcia and Valencia inner cities

The study refers mainly to Lynch's way of building the image of a city (1960) based on five elements: landmarks, nodes, paths, edges and districts. Image capture mainly happens while people walk in, travel or visit a city using different ways to get around (Morales 2015; Morales and Lázaro, in press) and they organize a mental map of the city. University students were selected from two Spanish cities: Murcia (215 respondents) and Valencia (300 respondents) to reply to a survey and to draw a map of their city after some explanation on Lynch categories. Results of the images of the cities in which they were currently living also proved useful in providing guidelines on sustainable growth of cities and in detecting deficiencies in order to correct them. The research model could be used in other cities throughout the world.

Co-authors: Francisco José Morales Yago, María Luisa de Lázaro y Torres and María Luisa Gómez Ruiz

F4 Bahar Kaba, Ege University, Place attachment and urban-related identity in gated communities: the case of Mavisehir (Izmir, Turkey)

### **Place attachment and urban-related identity in gated communities: the case of Mavisehir (Izmir, Turkey)**

During the recent decades, the popularity of the gated communities as a residence area is increasing among the urban elite in Turkish big cities. Besides Istanbul and the capital city of Ankara, the city of Izmir, with a population of 4.3 million, is also one of the metropolises of Turkey in which gated communities pop up at diverse locations year by year. These units, which are considered as a reflection of globalization and neo-liberal policies on the urban landscape, lead to social and spatial segregation. Considering their social and spatial isolation from the rest of the city, it is important to understand how residents of gated communities are connected to both their neighbourhood –the gated community- and the rest of the city. Thus, the aim of this research was to investigate the reasons (push and pull factors) why people prefer gated communities, socio-economic and demographic characteristics its residents, their place attachment at neighbourhood level and urban-related identity.

Mavişehir, which is the oldest gated community of Izmir constructed in the early 90s and located in northern Izmir, was selected as the research area. The sample consisted of 225 participants. The participants were selected by quota and random sampling method.

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All participants were asked to fill in a questionnaire including several questions related to socio-demographic variables and questions related to housing preferences. The Place Attachment Scale of Lewicka (2010) and the Urban-related Identity Scale of Lalli (1992) were also applied in order to measure participants' "attachment level" and the "identity", related to the neighbourhood and the city of Izmir. Findings were analysed through SPSS.  $\chi^2$  tests, independent sample t-tests and one way analysis of variance were performed to determine the differences according to various variables.

The results of the research showed that the push factors which have effect on preferring gated communities are traffic density, noise and crowd density. On the other hand, pull factors are silent and tranquil atmosphere, availability of green areas and implementation of works such as cleaning, dues etc. by site management. The population of Mavişehir is highly homogeneous in aspect of socio-economic and demographic characteristics. (High income, high level of education, living mostly as core families or couples, urban social background etc.). Participants' attachment to Mavişehir is high. The length of residence in the neighbourhood, property ownership and spatial satisfaction are the significant variables that affect development of neighbourhood attachment. On the other hand, the residents of Mavişehir still have relationships with the city of Izmir. In others words, urban-related identity in case of Izmir is also strong among the gated community residents. Urban-related identity score is higher at the dimension of attachment, but lower at the dimensions of familiarity and past. Place of birth, the length of residence in the neighbourhood, property ownership are affective factors to consist and development of Izmir urban-related identity. "

F4 Athina Karatza /  
Apostola Galani,  
National and  
Kapodistrian  
University of  
Athens,  
  
European  
identity and  
European  
cultural heritage  
in Greek, British  
and Spanish  
Geography  
textbooks: A  
geographical  
approach

### **European identity and European cultural heritage in Greek, British and Spanish Geography textbooks: A geographical approach**

In the era of financial and migration crisis that many European countries encounter coupled with a general disaffection towards the European Union, questions, such as the construction of the European identity, arise. Europeans' poor or sometimes negative feelings about European identity and the lack of knowledge about European cultural heritage, aggravates the European crisis. Education plays a significant role in the shaping of identities – including a European one - while it prepares students for future decision making concerning local, national, regional, continental and universal issues. Geography is a discipline that attempts the identity construction. This study concerning the notions of heritage and identities in geographic Education, forms part of COHERE a funded through Horizon 2020 project which covers a carefully selected range of European territories and realities comparatively and in depth. Using qualitative descriptive analysis, a method for identifying, analyzing and reporting patterns (themes) within data, researchers examine the construction of the European identity, as well as the extent to which the European cultural heritage is recorded in Greek, British and Spanish Geography textbooks. Inferences are drawn on the way that European identities are constructed and the European cultural heritage is recorded, as well as the extent to which the key themes of Geography are used towards this purpose. The findings and their implications are discussed.



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F4 Sebastian Seidel, University of Cologne  
A border is therefore also a ban to go to the other country: student's concepts, experiences and imaginations of Europe's borders

### **A border is therefore also a ban to go to the other country: student's concepts, experiences and imaginations of Europe's borders**

Borders are a central feature in most of the recent political debates and global issues. Migration, Free-Trade-Agreements, Separation and the related border disputes fill the daily news. Usually associated with the idea and term territory they form and affect the political world in many ways and embrace the whole globe. Borders are the perfect example to study the indivisible connection between space, society and power and make their social construction visible. Political Geography sees them as one of its main subjects. Therefore, geography education in schools ought to support students in their knowledge of borders as a central part of identity formation and political socialization. Following recent migration processes a growing heterogeneous student body, with and without migration backgrounds and with or without experiences as refugees brings a multitude of different perspectives and knowledges about spatial borders into classes. For the students the personal perspectives on European borders might be an important part of gaining a broader knowledge about the social organization of space and human territoriality.

This presentation shows findings from 40 qualitative interviews with students (age: 14-16) from nine different schools in Germany. It focuses on the questions which concepts, experiences and imaginations the students have about European borders. We show the students ideas about the emergence, existence and meaning of borders as well as their own experiences on journeys and migration. Their different point of views might be the foundation for interesting changes in perspective in teachings about borders.