



Hidden Geographies
Skrite geografije

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years of geographical ventures



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Oral presentations - *Predavanja*

Hidden Geographies within Initial Teacher Education: trainee teachers encountering 'otherness' in the Museum of Orange Heritage, Belfast, Northern Ireland

Tracey Mckay, keynote speaker

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This research was inspired by David Newman's (2006) paper 'The lines that continue to separate us: borders in our 'borderless' world'. In this paper Newman (2006:1) pointed out how "we live in a world of lines and compartments. We may not necessarily see the lines, but they order our daily life practices and strengthen our belonging to, and identity with places and groups, while...perpetuating and re-perpetuating notions of difference and 'othering'. In the north of Ireland the deeply divided nature of society means that ethnic / cultural 'borders', to one extent or another, impact on many aspects of life, including education and initial teacher education. This paper is attentive to the experiences of students of initial teacher education attending a Catholic teacher training college (located on the Falls Road in west Belfast) as they cross the city to encounter representations of Orange (Protestant) cultural identity and heritage in the Museum of Orange Heritage. It reflects on their experience of crossing a hard-edged but largely 'hidden' or intangible cultural border to engage in a learning programme intended to explore identity, cultural diversity and mutual understanding within the context Citizenship Education of Northern Ireland Curriculum.

Newman, D (2006). 'The lines that continue to separate us: borders in our 'borderless' world. Progress in Human geography 30 (2), 1-19

Inaugural Human Geography: Hidden Geographies in Times of Change and Conflict

Gerry O'Reilly, keynote speaker

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Decoding hidden geographies poses challenges; reading hidden intelligible inter-relationships from a holistic perspective is imperative. Ethical interpretation is vital: to select, model and relate information to existing knowledge bases and ideals e.g. UN SDGs. Research seeks deeper levels of image, not always showing political-economy power brokers. Rising extremism in the USA, UK's Brexit stress, and populism across Europe, and from the Philippines to Brazil and fundamentalism epitomized by Daesh suggest this. Due to globalization, geographers are required to interpret from the smallest scales to world-wide levels. In this, managing and eliminating violence is no longer a choice for humanity, but a responsibility so as to avoid sliding into a dystopian world. Elucidating hidden geographies of power is essential; aligning geography, geopolitics and humanistic perspectives is vital. Resource control, defense, identity and existential variables need constant reassessment. The nexus between development and governance has to constantly review vulnerability and risk. Interconnections between organization and human needs have to be interpreted within global architectures and legacies; hidden geographies of emotions and fears are reshaping the emerging international landscape.

Live Geography: Geomedia as Interfaces for Spatial Thought

Josef Strobl, keynote speaker

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Discussing the role and design of digital geomedia as these are replacing traditional geographic media like maps, atlases and globes, it is recognized that digital media fundamentally differ from

digitized documents. Geomedia today predominantly are interfaces for online services and SDI, they serve as dynamic framing for discourse and interaction, and require fundamentally different approaches compared to static maps. In addition, geospatial data today result less from mapping processes, but mostly from continuous, live data streams. Established concepts of Time Geography are married with trajectory data models supported by moving objects databases, allowing exploration of past and current realities through spatiotemporal sensing, including analytical methods fully considering time, and demonstrate how visualisation and communication adapt to these changed paradigms. 'Maps' now serve as interactive online user interfaces connecting real people with digital representations of the real world. As real life more often than not is spatially organized, actors in society, business and environment leverage these powerful 'map' interface paradigms beyond simple 2D, guiding the user towards a learning outcome, some deeper insight or simply any mundane everyday task like navigation. In short, maps are not so much considered a product, but as a spatially organized interface allowing the exploration of geospatial knowledge, access to public participation and crowdsourcing, facilitating citizen science as well as navigating events and discovery of domains. Geomedia provide spatial indexing to spatial organisation(s) by integrating map and image displays, perspective views and virtual globes, forms and essentially any kind of digital online multimedia or any web service – whatever is accessed through a URL or URI. Geomedia make spatial thinking not only possible, but also superior!

Hidden landscapes of karst

Andrej Mihevc, keynote speaker

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Karst is a type of natural landscape with special relief and underground water flow formed during long geological periods on water-soluble rocks where the dissolution of rock is the most important geomorphic process.

Karst in Slovenia covers 8,800 square kilometres (43%) of the country. It is characterized by a rocky surface, underground water flow and karst landforms. First descriptions and research of caves, water phenomena, sinking rivers and springs date back to the 17th century. In 19th century karst relief features and phenomena were discovered and explained for the first time so local names like dolina, polje, uvala and others were taken as scientific terms, and also karst as a special type of landscape was named by local name kras.

I will present some aspects of karst hidden nature: karst forms due to slow dissolution so that geomorphic processes are "hidden" to eye and normal human experience. Hidden is also karst underground water flow that formed caves. Till now 13,200 caves were explored with total length of 870 km. Through some of the caves waters drain and rivers flow, other caves are relicts. They preserve sediments dating back to Miocene or younger. Cave sediments keep records of past environments, archaeological data and traces of recent use and misuse of the karst.

Most of these phenomena are hidden below the surface or can be observed only by scientific tools so they are hidden and often overlooked by the public.

Geographical View of the Local Tourism Supply-Side: The Evidence from High Mountainous Georgia

Gvantsa Salukvadze, Joseph Salukvadze

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The primary aim of the article is to study the spatial peculiarities of the integration process of the local community-driven economic activities within a local tourism supply chain. Multiplier effect theory as a theoretical baseline to identify local economic activities that have the potential to provide additional benefits for the host community through integration with tourism.

The scientific novelty of the research stands on a synthesis of solutions of mainstream approaches with the traditional methods of collecting and analyzing information. Importantly, the qualitative study was held in various settlements of the selected municipality – Mestia municipality, that is among the most visited tourist places in high mountainous Georgia. The qualitative research methods for data collection combined in-depth interviews with local households and focused interviews with representatives of the tourism industry. The empirical information was analyzed on the basis of a seven-step thematic analysis method, through qualitative data analysis software – MAXQDA. Software QGIS allowed revealing primary trends and challenges, eventually, illustrate the spatial peculiarities of the analyzed tourism supply chain.

Ultimately, the presented article identifies the main actors of the local tourism supply chain and examines its functioning in the spatial context of Mestia municipality. The study revealed the geographical division of various settlements and their supply interlinkages.

Geography Education: Making interconnections visible

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In this presentation, perspectives of Geography as a secondary school subject will be given. What is Geography to the learners? What is Geography according to curriculum? Who are the learners? Where do they meet Geography in their daily lives? Based on literature and own research, answers to these questions will be discussed.

The second part of the presentation will focus on different school, project and research activities dealing with geographic competencies for upper secondary schools. European, Austrian and classroom examples are given to be used as good practices in terms of pupils' research, spatial and critical thinking and student-centred learning in the 21st century. As a conclusion, discussion about what Geography as a school subject and beyond can contribute to our future in different scales shall be opened.

Species level classification of urban trees from multispectral imagery

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Multispectral remote sensing is an effective tool to create thematic maps that are useful in urban management or planning. In our study, we performed supervised classification methods on multispectral imagery from the WorldView-2 satellite sensor to classify urban tree species in Debrecen, Hungary. Field reference data was collected from the 6 most common tree species in the study area. The reference data was divided into train (70%) and test (30%) datasets. Maximum Likelihood Classification (MLC) and Support Vector Machine (SVM) classifiers were applied on different numbers of MNF-transformed bands.

The best Overall Accuracy (OA) was achieved with the first 4 and 8 transformed bands with the MLC (OA=75.1%, $\kappa=0.697$) and SVM (OA=71.0%, $\kappa=0.641$) algorithms, respectively. Generally, MLC performed better than SVM. Evergreens and sycamore were separated with the highest accuracies both with MLC and SVM, with the Producer's Accuracy (PA) of 78.5–89.2%. Black locust was classified with the lowest accuracy (38.8%) with the SVM, but MLC performed better, resulting in 83.3% PA.

Multispectral imagery is an accessible source for species level classification of urban trees. Despite the relatively low number of spectral bands, in this study we achieved a moderately good accuracy for basic vegetation mapping, which can be used in spatial planning and decision making.

The research was funded by the EFOP–3.6.1–16–2016–00022, TNN123457 and KH126481 projects.

Hidden ecological dimensions of human development

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In the 1990s, the United Nations introduced the human development concept as well as the Human Development Index in order to measure the progress in three basic dimensions of human development: health, education, and standard of living. The human development concept highlights the translation of economic gains into a better quality of life for citizens. Its Human Development Index was never intended to cover the aspects of social safety and justice, gender inequality, political freedom, (environmental) sustainability, etc. Although every social or economic activity has its own environmental consequences, the discourse on human development seemed to overlook the ecological dimension of development. And while human development has improved worldwide in the last decades, it has become increasingly obvious that these achievements have been accompanied by growing environmental pressures on Earth's natural resources and environmental services. The latter can be at least partially illustrated by the ecological footprint calculations, measuring the amount of biologically productive land and water area, necessary to support the current lifestyle of people. The presentation will focus on the comparison of trends in the ecological footprint and the human development achievements after the year 1990 in different regions and countries around the world in order to evaluate their socioeconomic development patterns from the viewpoint of their environmental consequences.

Hidden Education Through Gamification – The Example How To Teach Migration Related Topics Through Didactic Board Game

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Every country, being big or small, has been, directly or indirectly, involved into migration processes. Also Slovenia, being one of the smaller European countries, has always been part of various migration processes – emigration (which was the most evident during the 19th and at the beginning of the 20th Century), immigration (especially in the second half of the 20th Century), or being just the transit country in the process of massive migration paths (as a part of so-called Western Balkan migration route in 2015-2016). Because migration processes has become an important part of our everyday life there is a need that the topics about migration are included also into a school system. The paper shows an example how we can teach youth about migration through gamification – an innovative, didactic, and strategic board game Crossing borders. When playing the game a player hiddenly learn about migration related topics.

The burden of the coastal area with the solid waste in the Kornati National Park

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The paper content partially summarizes the intensive three-month cooperation survey of the Environmental Protection College Velenje and the Department of Geography of the University of Zadar in 2018. We have upgraded the joint preparation of the methodology for the inventory of solid

waste in the coastal zone and verified the inventory list with the field work in the National Park Kornati.

A large part of the archipelago, approximately 2/3 of the land and the waters of Kornati (217 km²) in Central Dalmatia (the Šibenik-Knin County), was proclaimed and protected in the 1980 as a national park. It is a place of exceptional natural values, cultural heritage and mostly occasional inhabitants, which is at the same time very attractive for visitors. With the Action Plan for the management of the area, they want to maintain high aesthetics of the landscape, geomorphologic and geological specificities, the image of a large fragmentation of the coast and the extremely rich biocenosis of the marine ecosystem in a sustainable way.

The observed natural conditions (winds, currents) and socio-economic reasons (environmental pressures during the high tourist season) bring additional features to the area under consideration. In the typical image of the large rocky and unpopulated labyrinth of the islands, the anthropogenic landscape resources and their influences are concentrated in the coastal zone: a) areas with settlements and infrastructure for the predominant nautical tourism, and b) uninhabited areas, mostly with bays and coves accessible only from the sea. The data showed the different origin of the waste according to the country of origin or production: Croatia, Turkey, Albania, Poland, Italy, Bosnia and Herzegovina, Montenegro, Germany, France, Greece, Hungary, Macedonia. Most of the time, plastic household and solid wood waste were the predominant share. Due to the natural and anthropogenic activities the waste has not stopped to accumulate.

Geography: A Hidden Antidote to Rescue Architecture

Re-reading the Critical Regionalism through the Lens of Geography

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Critical regionalism can be seen as an approach to architecture that tries to stand up for places culture and identifies the identity of a place where modern architecture has failed to, by using the building's

context and reference of local characteristics. This idea was initiated by Lewis Mumford and then by Frampton, Tzonis, and Lefaivre. Frampton in his essay argues that it is critical to adopt universal values of modernism, taking into account the geographical context of the building. He refers directly to the climate, light, topography, and local tectonic form, which should be understood as historical and geographical conditions of the construction industry. This study discusses the critical regionalism theory and its geographical expressions in architecture. The paper opens with a theoretical review, presenting a criticism of modernism and the role of geographical factors as a hidden antidote to rescue modern architecture. Thus, geography gives us an incredible lens through which to see the architecture and their elements. These statements raise the question of what is architecture pertaining to geography. What can still be used to identify the originality of a place or region when globalization and cultural homogenising are ever-growing and, in many cases, have ceased to exist? Perhaps the most powerful story here is the narrative of how geographical aspects make it possible to trigger critical regionalism as a powerful paradigm in the contemporary architecture.

MYGEO: Geo tools for Modernization and Youth Employment

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MY GEO ("Geo tools for Modernization and Youth Employment", 2018-1-IT02-KA203-048195) is an European project that aims to improve the capabilities of graduate students for their incorporation to the geospatial industry. In this way, the project is working on the identification of a set of key competences related to the use of geo-information tools (GIS), in particular the most relevant for the labor market, in order to implement a training course. This project also seeks to define a "learning

line" and a competences assessment framework, allowing to measure the impact of this training on learners' knowledge and competences, according to the industry needs. In this context, MY GEO project has launched a survey for the identification of the key competences that students should acquire in order to increase their employability. This presentation will show preliminary results of the survey in order to create a MOOC addressed to students interested in the acquisition of more accurate skills and competences, as requested by companies in their job demands.

Labour Market For Geography Teachers In Poland: Visible And Hidden Issues

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Economic, social and cultural changes generate new challenges on the labour market for teachers in every country. The literature review shows that the most significant changes in the dynamics and type of career paths are visible in those professions that are strongly correlated with systemic changes. Restructuring process in the school network, and implementation of new plans and curricula as a result of educational reforms have an impact on the demand for teachers of certain specialties, including teachers of geography.

Poland is the country where three key processes are nowadays taking place on the educational labour market: reform of educational system, permanent decrease of the number of students and dynamic decrease in HE students interested teaching profession. These ones compelling them to take on a variety of career paths necessary to keep their job. These processes are clearly worthy of academic analysis because the quality of teachers' work, closely related to their career path, plays a fundamental role in developing social capital.

The objective of the presentation is to analyse current and future situation of geography teachers in the context of challenges

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Are Educators Interested in Certification?

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Developing geospatial career pathways for students from grades 7-12 and through college with the skills and competencies needed to enter workforce are objectives of the GeoTech Center. One impediment to this pathway is the lack of ways for educators to document their geospatial expertise and qualify to teach at secondary-level programs. Geospatial professionals have multiple options to document expertise through professional certification. Educators do not usually have the qualifications for these certification programs. The GeoTech Center is researching the possibility of developing an Educator Certification Pathway that will help educators work toward documenting their expertise. This presentation will cover the pathway for certification and describe the proposed pilot program for the Educator Certification program.

Assessment the efficiency of new designed spectral indices in extraction of main land covers from satellite imageries

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Spectral indices are one of the most important digital image processing techniques used for extraction and identification of land cover from remote sensing data. Index design for any type of land

cover requires well knowledge and understanding of the spectral response curve of that land cover type compared to spectral curves of other land cover types. Several indices for main land cover are published in literature but it turned out some of them are inaccurate in discrimination of the required land cover. The current study aims to design new indices for Built-up, vegetation cover, water bodies and bare land and compare their results with that come from other available indices. Many satellite imageries i.e., Landsat 7, Landsat 8 and Sentinel 2 data at a different geographic location are used in testing the efficiency of new indices. Accuracy assessment methods are applied to show the discrimination possibility of boundary pixels of classes with approximately similar in their spectral signature curves. The results indicate the superior of newly designed indices over the other available indices and by adding them to original bands of satellite images will enhance the digital classification results.

Local responses to perceived marginalization. Case study: Piața Traian, Timișoara

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In this communication we study the impact that the visible degradation of a neighbourhood had on the social behaviour and responses of the residents in terms of place attachment and participation. The main objective is to identify the factors that generated the negative image associated by residents themselves to the neighbourhood, the elements that determined the degradation and marginalization of the neighbourhood and the consequences of these processes on the people behaviour. For this purpose, we collected data through surveys from local residents and interviews to professionals from Piața Traian, a public space and core element of Fabric neighbourhood, from Timișoara, Romania. This is a square with a long tradition and history from Timisoara, one of the symbolic squares of the city, that was marked by a process of transformation that led to a degraded place, associated in the collective imagery with a place of fear. The results indicate that the main actor that contributed to the marginalization of the square was represented by the local authorities, which allowed its physical and social degradation, by not investing in improvements and by allowing people with social problems to settle there. Facing this situation, many residents considered the option of moving to other neighbourhoods or reduced the degree of participation in the neighbourhood's life. These consequences can, in a bad scenario, lead to segregation, which should be avoided through adequate strategies.

Sustained Niche of Georgian Hospitality as an Augmented Product under Accelerated Tourism Development: Evidence from High-Mountainous Georgia

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The mountain regions of Georgia have been embracing new development pathways, more precisely local residents are taking advantages of rapid tourism development. Currently, the statistical evidence clearly shows that the settlements on the slopes of the Caucasus Mountains constitute one of the most visited tourist destinations in the country. In this context, the paper seeks to shed new light on the transformation of centuries-long Georgian hospitality into the social phenomenon, which has unfolded the existence of value-added services in the guesthouses. The core Georgian cultural aspect "guest is from God" played a vital role in the establishment of the authentic guest-host relationship between visitors and the local community. The unique cultural transformation process resulted in the formation of uncommodified part of tourism services. Together such competitive advantage of the mountainous destinations creates extra socio-economic benefits while remaining the long-standing cultural identity of the host community. Importantly, the usage of the Grounded Theory approach as a theoretical baseline of the study has been of high value in the exploration of primary findings. Namely, the actual signs of the Georgian hospitality transformation into augmented

product were identified based on the open-coded narratives (interviews, booking.com reviews) of the mountain residents and visitors. The textual information is processed using MAXQDA2018 with its worthwhile advantageous tools.

The role of age in an original and a new identification with a region in a regional amalgam. Czech experience.

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During the last almost four decades, geographers have investigated issues related to how regions are produced and reproduced as part of the broader process of social production of space. However, one crucial phenomenon of the regional formation has been rather neglected: the disappearance of regions through the process of deinstitutionalisation, when old regions are replaced by new ones. The process results in the appearance of regional amalgams which can be used by their residents to frame their spatial identities. Nevertheless, identification of people with the deinstitutionalised region can persist and as such leads to a clash between the old and new regional identification. The aim of the presentation is to contribute to the existing knowledge about the impact of deinstitutionalization on the formation of regional identities of the population. In the presentation, we would like to introduce results of the analysis concerning spatial identification in a regional amalgam and relationship between the age of residents and the meaning of deinstitutionalised and newly institutionalised regions. For this purpose, we focus on one particular regional amalgam, Pelhřimov region, which used to be part of the Jihočeský region (kraj) formed during the communist Czechoslovakia. As a consequence of the rescaling of statehood in 2000, Pelhřimov region was separated from the Jihočeský region and merged with the newly established Vysočina region (Kraj Vysočina).

Highly discrete mapping of the growing season time frames

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Length, beginning and ending dates as well as some other parameters of growing season can be recognized also as secondary or indirect parameters of weather and climate, as the plants growing conditions are formed by such (primary) parameters as temperature, humidity, insolation, etc. A number of studies shown that time frames of full growing season and its subseasons can be estimated by analysis of remotely sensed vegetation indexes data (Normalized Difference Vegetation Index, Normalized Difference Water Index, etc.). In such a context, our ongoing study is devoted to design a processing chain for daily-collected satellite data series processing aimed on mapping of vegetation indexes and growing season time frames. The study is realised on the example of MODIS data, however can be scaled onto comparable data sources. We are developing an open source software toolset (unfinished currently) that allows to derive vegetation index map series in automated mode with the time resolution of initial data series. In the conference talk, we are planing to present examples of vegetation index map series (NDWI is used basically to determine growing season time frames) and map series of spatial distribution of the growing season time frames. Both map series have close-to-one-day time resolution (variable in fact due to initial data characteristics). In addition, we will describe and discuss difficulties of data processing in a selected way and some ways of difficulties coping.

The hidden geography of the industry transfer: a case study of the Shenshan Special Cooperation Zone in China

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This paper explores the industry transfer in China from a perspective of “hidden geography”, which is understood as inner geography that under the external overlaps. It stresses that the superficial phenomena may prevent access to the inner truth. And it takes the industrial transfer park, the Shenshan Special Cooperation Zone as an example, which locates in Shanwei with industries transferred from Shenzhen. Specifically the study is carried out by methods of field investigation, interview, and literature review. The findings show that, the evolutionary transfers of industries and regulations lead to the current overlaps of administration from these two cities. On one hand, the daily administrative regulations of the zone have been handed over to Shenzhen as one of its governmental districts, yet in fact the zone is still within the jurisdictional territory of Shanwei on the other. Such dual administration is exceptional throughout the country, but is possible in Shenzhen, as a city enjoying advantages of institutional experiments. To conclude, the case indicates that the hidden geography is covered by some common beliefs, which are likely to mislead us from discovering the truth. Hence, geographers should pay extra attention into some common geographical phenomena to probe into the “hidden geography”. Keywords: hidden geography, industry transfer, Shenshan Special Cooperation Zone, administration, China

Shades of gray - hidden geographies of rural ageing

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Ageing is relevant issue in many countries, also in Slovenia since it ranks as 9th amongst the states worldwide with the most unfavourable age structure (taking into consideration the share of population aged 65+ in 2050). This visible fact has numerous hidden geographical implications (no appropriate data, hidden lives, expectations and potentials of elderly people, etc.) which will focus on rural ageing based on survey in rural Slovenia (N=1200 elderly persons). The disclosure of several interesting and useful potentials of rural elderly might help decision-makers in providing more suitable solutions towards age-friendly rural communities.

Australia Landscape Through The Aboriginal Art Expressions

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Contemporary pedagogical approaches encourage active integration of students in the educational process itself. The landscape, which represents the main subject of examination of geography, can be observed from different points of view. In our study, students began with getting to know the chosen part of Australia's landscape by using illustrative–demonstrative method – geographical panorama. The basis of geographical panorama are satellite images. Our students designed a variety of natural (landscape, geological structure, bodies of water) and sociogeographical characteristics (land use, population) that can be seen in the landscape and are based on satellite images. This was followed by a transformation of geographical panorama of landscape into a work of art. The final art product represents the synthesis of a student's personal interpretation of space values by complying the principles of Aboriginal art (choice of colors, techniques and symbols). By using these techniques the piece of art gives a resemblance of the origins of Aboriginal art – portraying »personal mental maps« of landscape.

Key words: landscape, geographical panorama, space values, Aboriginal art, cross curricular integration.

Use of digital spatial data in the interdisciplinary research projects in the Polish-German border area

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The Polish-German border area with the River Oder, which flows across the border, has become an interesting research area for scientists from various disciplines. The functions of the Oder and its floodplains have changed here diametrically in the last two centuries - they have served as battlefields, recreational areas, border areas and nature reserves. During the presentation selected resources of available spatial data in Poland and Germany, i.a. 19th century maps of Prussia and digital spatial data (e. g. LIDAR data), as well as ways which will increase their availability will be presented. Besides, the implementation of individual GIS applications as well as the modelling, processing and analysis of spatial data as new possibilities for the development of interdisciplinary research projects of the German-Polish border region will be highlighted.

Explaining hidden structures of Slovenian landscape classifications

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Landscape classifications are used in numerous tasks (e.g. teaching, researching, planning). Some classifications are officially used, even at the European level. Thus they must be prepared in a particularly transparent and objective way. We presume that existing manually-made landscape classifications are at a decent quality level and can be confirmed with mathematical rules. The objective of this study was to model and evaluate existing natural landscape classifications of Slovenia with different quantitative methods. In the research we rasterized existing landscape classifications of Slovenia and collected more than 40 raster data layers (predictors), which represented different environmental characteristics (e.g. elevation). We selected different sets of training cells and produced several modeled natural landscape classifications. For this purpose, we used different methods (e.g. decision trees). In the final stage, we compared the computer-based classifications (modeled classifications) to the original classifications. The modeling gave reasonable results, thus we can conclude that the manually-made landscape classifications were prepared with a great sense. Additionally, we tested whether mathematical rules can be established in the case of poorly designed classification. Therefore, we conducted an experiment on the case of intentionally distorted classifications. We noted that some methods gave unreasonable results and some were even not capable of forming rules.

Invisible life of food waste

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“Show me your garbage, and I will tell you who you are. Show me how much waste you produce, and I will tell you what kind of society you live in.” This is how anthropologist Thomas Hylland Eriksen (2011) begins his book on waste. In this paper, the authors extend Eriksen’s idea by developing an online questionnaire, which helps visualising the production of food waste in households and examines social and psychological factors, which shape behaviour and habits regarding waste. In recent years, food waste has become a complex phenomenon attracting attention of scientists, consumers and activists. In fact, the global “heap of food waste” is currently expanding at an alarming

rate. According to the World Bank, one third of food produced for human consumption is lost or wasted, with direct economic consequences put at \$750 billion globally annually. In Slovenia, almost 131,800 tonnes of food waste were generated in 2017 or 64 kg per person on average. This paper presents findings of a research on food waste in households, carried out in Slovenia. Authors of the study analysed what kind of relationships to waste do householders establish in their daily lives; On the basis of their findings, they attempt to explain how, when and why do people in the researched area transform “food” into “waste.” Finally, they propose a design of a people-centred solution, which helps detecting and visualising the production of waste in households as well as promotes waste reduction.

Nature-Based Solutions for urban heat island mitigation and urban ecosystems improvement

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Nature-Based Solutions (NBS) is measure for urban ecosystems restoration and rehabilitation and is presented as an instrument for urban heat island (UHI) effects mitigation. Based on global climate change processes, the urban areas, particularly middle- and large-sized cities are affected by intense UHI phenomena. The climate in urban areas is modified based on many indicators, such as: artificial surface, surface roughness, lack of green areas, daily traffic intensity, energy consumption, population density, etc. Therefore, the urban areas are affected with higher air temperatures presented as UHI and heat waves that have higher intensity comparing to urban hinterlands. Implementation the green areas in built-up urban zones can lead to the reduction in UHI intensity and improve the urban ecosystems in general. The NBS aim is to enhancing existing natural solutions and implemented actions that are inspired by nature. Published scientific researches based on climate monitoring, urban planning and modeling data show that: a) urban planning based on climate change awareness could provide better outdoor human thermal comfort and better well-being conditions; b) reconstruction of existing green/blue areas in built-up zones could improve urban ecosystems and quality of life of urban population. All used measures are related with NBS roles and have proved that using nature solutions can reduce disaster risks, improved human well-being and socially inclusive green growth.

Children’s Discovery of Hidden Geographies through Environmental Mapping Activity

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The environmental mapping activity is a good opportunity for children to observe and investigate their environment, and to represent it on the map. Himiyama (2010) indicated that children follow the process when they make an environmental map; project planning, preparation for field survey, field survey and observation, mapping/recording, map making, map reading and explanation, and presentation. Just only the classroom environmental education doesn’t enhance children’s environmental awareness. The on-site experience is very important and pleasant for children to foster their interest and comprehension about environment. The Asahikawa Environmental Map Contest started in 1991, and it has been annually since then with the aim of enhancing environmental awareness of children. Application to the Map Contest is open to all school children of primary and secondary school levels throughout the world. For example, students from Osnovna šola Brezovica pri Ljubljani in Slovenija have participated in it since 2017. In presentation, we will show some children’s discovery of hidden geographies on their environmental map.

What hidden instruction does the teacher do in inquiry-based learning in the geography classroom?

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This project investigates how inquiry skills are developed when students pose geographical questions, synthesise and analyse information and make decisions about land use. By filming students undertaking a geography inquiry, we investigated what the teacher did during an inquiry. The analysis examines how the teacher navigates the role of both guiding students yet also enabling students' own decision-making and questioning, which are essential elements of the inquiry process. One year 9 geography class of 22 students and 1 teacher from a government school in the inner Metropolitan region of Melbourne participated in this study class. The teacher designed an inquiry-based task that asked students to create a plan to redesign a local park that would meet the needs of the local community. As part of the task, the teacher and students visited the park on the way to the university and then collaboratively creating their proposal in groups of about four students. The students presented their planning and a new design for the park at the end of the day. The classes were video-recorded in a purpose-built laboratory classroom using 10 cameras, and work samples were photographed or scanned. A teacher interview was conducted after the lesson. The findings show that the role of the teacher during inquiry-based learning is complex. The Japanese pedagogical approach of Kikan Shido – translated into English as Between Desks Instruction – was a useful analytical tool to use.

Additional layers for complex analysis of human and animal middle-distance movement

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This work is devoted to route formation by the group of people or animals in changing environment. In recent years, the number of works using GPS tracks' coordinates with reference to surrounding landscape has increased. In new studies, wrist recorders monitor the pulse and pressure of travelers. Experiments are carried out with animals using neurologgers with EEG. But what is lacking now? Predictions. For example: "How will the route of tourists change in winter, if the temperature at ski resorts increases?", "How will the wintering places of birds change with additional improvement?". For predicting in group movements is important to analyze perception of participants and to identify dynamically changing trend of moving in direction / to goal. Analysis of extended data sets allows determining favorable and relatively accessible places to visit or to inhabit. The results can be used, for example, to determine interesting tourist sites for observing birds.

Impacts of climate change on agriculture in Pakistan: 20 years of past and future

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This paper provides a comprehensive view of wide ranging climate change impacts affecting water availability, glaciers, plant physiology, horticulture and crop production. In agricultural context, early ending and late onset of winter, drought, floods, irregular patterns of temperature rise, increasing crop pests and diseases and low productivity are adverse outcomes of climate change in Pakistan in the last two decades. However, these impacts are not quantified yet. This research paper puts light on these drastic impacts of climate change on agriculture in Pakistan by presenting qualitative and

quantitative data of primary and secondary nature. Special attention is paid to the impacts of local climate change instead of global climate because of its extensive impacts on agriculture. Moreover, Pakistan, being an agricultural country, has economically remained more sensitive to agricultural productivity affected by droughts, unexpected floods, uneven seasonal changes temperature waves. This study covers all these aspects comprehensively.

Hidden Lakes of the Classical Karst

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The Karst Ljubljana River watershed is one of the northernmost parts of the Dinaric Karst that is also referred to as the Classical Karst. Complex hydrological system is accompanied by a series of various karst phenomena, which make this area known as an outstanding example of geomorphological and hydrological diversity of karst. In the westernmost part of the area, a karst plain of Upper Pivka is positioned. Within the plain there are numerous karst depressions, which are hosting intermittent lakes during high water-table levels. The aim of our research was to determine morphogenesis of those depressions by means of classic geomorphologic analytic approach supported by electrical resistivity tomography (ERT) of the depression's floors. Based on our research we can confirm that there are at least two different morphogenetic types of those depressions. The first type of depressions can be interpreted as periodically inundated uvalas. The second type are collapse dolines in a morphogenetic perspective.

Historical evolution of the tasks of the European Parliament

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This article brings a brief description and critical analysis, based on the existing bibliography, of the history of the European Parliament and the powers granted to it in the evolutionary process. It presents a historical overview from its formation in the year of 1951 to the present day, with special attention to the post-Lisbon Treaty period. The study of this theme is of fundamental importance for the proper understanding of the current functioning of the European Parliament, which in the course of history has been adding powers and becoming a protagonist within the bodies that make up the European Union.

The European Parliament represents the citizens of the 28 Member States (including the United Kingdom) of the European Union and brings together 751 legislators. In order to make a survey of its history it is necessary to draw a parallel to the history of the European Union itself and its milestones, since both are directly linked.

The European Parliament is currently the most advanced model of a multinational parliament, where, in addition to being elected directly and through simultaneous elections in the twenty-eight member states, it has a wide range of effectively legislative and oversight powers over other institutions that make up the such as the Commission and the European Council.

Visualising the subterranean: drainage, tunnels and flows in Welsh lead mining landscapes

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This paper discusses controversies surrounding the construction of drainage tunnels below the lead mining landscapes of north-east Wales in the nineteenth and early twentieth centuries. Tunnels provoked debates about power and privilege, the occupation and ownership of the subterranean, and concerns over the flow, disruption and contamination of underground watercourses and local water supplies. A range of imaginaries about subterranean depths were at play. The need for drainage tunnels was subject to a boosterism about the “splendid” and “promising” discoveries of riches in deep, unknown worlds by “unwatering” abandoned mines and probing further underground to extract ore from new lodes. Engineers and miners were celebrated as pioneers and adventurers in revealing hidden geographies and “unlocking” mineral wealth, allowing, in the process, companies to map and control the subterranean. Tunnels and underground channels raised questions over purpose, design and social and environmental impacts, and demands were placed on drainage companies to meet local social and economic obligations. The alteration of underground geographies led to court cases and hearings. The formations, structures, materialities and aesthetics of the underground, geological maps, and discussion about the flow of carboniferous limestone water, were essential to testimony that depended on a visualisation of hidden subterranean depths to explain the social and environmental effects of tunnel construction.

Storytelling Experiences in UNESCO Heritage Centers by Millennial Tourists

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Tourists are more and more sensible to other cultures, lifestyles and want to have a deeper contact with the destinations they visit. So, intangible attractions, like stories, are gaining value, as they are a mechanism to immerse in local cultures. In fact, stories, legends and myths are important tourism attractions and also reinforce the identity of destinations (Domingos, 2009). The present study focuses on the millennial generation, as it is one of the world's most heavily anticipated markets (Bloomberg News, 2016). This generation is changing the world perspective on goods and services since they opt to live ephemeral moments, instead of own property, acquire luxury items, and spent their vacations detached from local communities. This study aims to analyze storytelling experiences in World Heritage Historical Centers (WHHC), regarding the effect of storytelling tourist experiences on place-attachment. A quantitative approach was used for this analysis, through questionnaires to millennial tourists in the three Portuguese WHHC: Porto, Guimarães and Évora. The results confirmed the model of Schmitt (1999), as tourism experience for Millennials have five dimensions: (1) sense, (2) feel, (3) think, (4) act, and (5) relate. Also, it was possible to confirm that storytelling has impact on place-attachment, specifically on four dimensions: place-identity, place-dependence, place affect, place social bonding confirming previous studies (Kyle, Graefe, & Manning, 2005).

The Perceptions of Rural Places by residents: A Generational Analysis

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Places are social and cultural productions more than simply physical areas and powerfully marked by people imaginary. Socially constructed rural spaces provide new leisure spaces, and positive associations with attributes that are very attractive to urban tourists and qualify residents' life. Rural spaces are embedded in a nostalgic atmosphere and have tangible and intangible attributes that are part of an idyllic place where there is a less rushed, complex and stressful lifestyle, echo of a simpler and healthier life. Within the context of perceptions of rural areas, the purpose of this study is to identify the rural destinations' images from the perspective of residents through different generations.

Discover the World Education

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A brief overview of Discover the World Education to include study trips, free award winning teacher resources, the new geography teacher zone and how we support international schools.

Role of Eco-Tourism in Community and Sustainable Development: A Case Study of Ranthambhore Tiger Reserve, India

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Sustainable wild conservation can lead to better sustainable development of ecosystem services. We know that climate change has been connected to the endangerment and extinction of many flora and fauna. This rapid and widespread phenomenon is extremely challenging for global biodiversity, ecosystems and future earth. One of the prime threats to wild habitats, however, is climate change as desertification and sea level rise could wipe out most of the limited territory that remains.

Therefore, the ecosystem services is definitely mitigate for climate change such as conserve the habitat, water quality, quality of life, global carbon cycle, economic growth, demographics, agriculture, forest products, regional and planning policies through sustainable conservation practices. The example of Ranthambhore have a more than 60 tigers and about 0.5 million people directly or indirectly interdependent on these ecosystem services. Tiger conservation practices influence both environmental quality and the quality of life of native people. Changes in habitat, water and air quality would be contribute for the environmental, social and economic aspects of local communities. If the success of tiger conservation practices is automatically preserve the habitat, water quality, quality of life, carbon cycle, population growth, economic growth, demographics, agriculture and forest products, regional and planning and policies. Therefore, my focus is on community development and Sustainable Development.

Real life geography through media - project work in the IB MYP

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Project work in the IB MYP, a worldwide-recognized international school programme, allows students to do a step forward towards solving real life problems and gaining lifelong knowledge. Project work, which is supported by programme aims and objectives as well as assessment strategies, encourages students to develop different skills and look at geography from another perspective. Projects introduced at this conference will show how a subject specific content and context can be involved in real life situations, such as media; from writing a magazine article to creating a propaganda brochure. Such products are a good example of how is geography part of our lives, although often hidden.

Nature-based solutions in Strategic Environmental Assessment: Case study Romania

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Given that the urban areas experience continuous change, it is necessary to identify integrated, efficient and sustainable solutions. Environmental permits contain measures to prevent, reduce and, where possible, compensate the significant impacts of the proposed objectives on environmental factors. Nature-based solutions represent the key of improving environmental quality through which urban areas can increase their resilience to new challenges and promote sustainable economic growth. The purpose of the study is to identify the characteristics of the conditions imposed by the environmental authorities and to suggest recommendations for the integration of Nature-based solutions in order to promote sustainable urban development. In the analyzed environmental protection regulatory acts, there are no direct references to Nature-based solutions. It can be pointed out that the national legislation is a limiting factor in the promotion of Nature-based solutions as there are no documents to which they can directly relate. Thus, the decision makers must establish evaluation methodologies and address concrete measures aimed to urban management. A number of measures have been identified that have the potential to integrate different categories of Nature-based solutions, mainly into domains such as: air quality, adaptation and control of climate change, water management, biodiversity, natural hazards, transport, agriculture and landscape.

Erwin Raisz : A cartographer's influence on school cartography

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Erwin Raisz was an internationally recognized representative of the American cartography in the 20th century. He was the author of two textbooks on Cartography for Higher Education and his „General Cartography” (1938) was the first textbook written on this topic in the United States. His research activities covered diverse areas, but two of them should be highlighted: the making and use of cartograms as well as the representation of landforms. At the same time, his personal interest in the popularization of cartographic knowledge and in school cartography is present in his works. Maps and atlases made by him exerted a considerable influence not only in the teaching of Geography in American Elementary and Secondary schools, but also in other countries. The principles developed by him for the use of maps and other cartographic products in schools have stood the test of time and can be also considered valid for the current teaching of Geography and Cartography.

Stakeholders involved in promoting Natural based Solutions through urban reconversion projects in post industrial landscapes

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Post-industrial areas reconversion is a process that requires along its various stages of evolution an integrated participation of diverse stakeholders. The relationships between stakeholders have a direct impact in sharing information and decision-making processes, having the capacity to limit or promote the use of a certain type of solutions. This article uses Social Network Analysis (SNA) to visualize the stakeholder's network involved in urban reconversion projects around the Europe, in post-industrial landscapes, which are based on NBS use. The purpose of the study is to identify the types of actors involved in promoting NBS, to analyze the centrality and influence of actors in order to determine which actor holds the power at the local and network level.

As a result of the analysis, it has proved to be influential the municipalities of the cities and individuals, by having the value of eigenvector higher than 0,64. They represent interest groups that can restrict or promote green solutions in urban environments.

GIS as a transversal subject in Geography lectures: MYGEO project

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By using GIS it is possible to understand our planet. GIS allows us to deal with territory with global and local approach to climate change, biodiversity loss, risk of natural hazards, sustainability in agriculture, tourism, water supply or energy, economic globalization, urban sprawl, crime, and many other topics of global interest for the planet and local interest on our everyday lives. But ... GIS is known to be difficult to use and learn (Rickles, Ellul, & Haklay, 2017). Most geography departments teach GIS as a tool (Carlson, 2007) ... but there are other ways such as using GIS as a transversal topic for teaching geography and it is considered as a good practice in learning geography (Shin, 2009).

Is it possible to explain different subjects in our lectures by using GIS for learning aims?

We will try to find a method after analyzing articles, doctoral thesis, dissertations, book chapters that use GIS for research and collecting some University teachers' testimonies.

The SEED Project: Smart Entrepreneurial Education and training in Digital farming

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The SEED project aims to:

- increase the employability of young people, by supporting the development of a highly skilled, qualified and mobile workforce, also thanks to transnational placement;
- support the development of a joint VET qualification at the EU level;
- promote work-based learning, supported by a mobility component.

The main outputs from the project will be:

- the definition of a qualification profile based on modular units of learning outcomes (Los) to create a new qualification or to review an already existing qualification. The LOs and, more specifically units of LOs will be identified and validated by the VET Centres participating in the consortium, taking into account the transversal nature of the subjects involved.
- starting from existing curricula a new qualification profile: Expert in Digital Farming;
- the elaboration of assessment standard: a Joint VET Qualification (EQF 5) on digital farming. Skills developed will be mapped against the EntreCOMP (link) and DigCOMP (link) frameworks. Work-based learning (link) will be the main feature of the project

www.digitalseed.eu

Geography of Imagination: It Constructs and Deconstructs Borders

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Geography, in the very beginning, was the discipline that revolved around the things that were perceptible. But as Human Geography developed as a strong paradigm, human actions and behaviour were studied thoroughly. Human imaginations developed tall skyscrapers, dams, industrial complexes and shopping malls etc. These examples clarify that human imaginations create new geographies. Imaginations explore possibilities which are hidden. With the emergence of nation-states, political borders came to existence deconstructing natural boundaries. Practically

borders are a narrow line or any area that separates two sovereign territories. But borders are not limited to land area only; these exist in societal thought processes and imaginations. Even academic terms and concepts create borders of a different kind, like when anyone says immigrant or foreigner it clearly demarcate a boundary between two persons. Similarly, Indian, German, Russian, European, American, Asian and such other identities construct borders, though many of these countries do not share direct boundaries. Borders exist in imaginations and human perceptions. Images of the mental borders are determined by the historical facts in trend. Like when we say India - Pakistan, the first image that quickly comes to our mind is of two soldiers fighting somewhere in Kashmir. But if someone says India - Nepal the picture that comes to mind is entirely different.

The importance of interdisciplinarity in political geography topics in the case of studying Slovene emigration to the U.S. and Slovene immigrant communities in the U.S.

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Scholars of Slovene migration studies in the case of the U.S. were so far mostly interested in the general framework of the Slovene emigrant history (directions and periods of emigration, number of emigrants, reasons for emigration, etc.) and in the selected aspects of Slovene immigrants' life in the new homeland (immigrant organizations, literary production, cultural and political activities, biographies of selected important immigrants). Some studies are dealing comprehensively with Slovene immigrant communities on micro-regional level. The micro-regional level refers to individual cities or smaller physical/geographic or administrative and political units within which the interactions between different communities and social processes usually take place.

In this paper, we will deal with different approaches to the study of Slovene emigrants in the U.S. We will focus on the spatial characteristics of immigrant communities, the questions posed by the use of the census materials and the mapping of the results. In studying the census materials and mapping, we will take into account the methods, used by statisticians, demographers, political geographers, historians and sociologists. An effective study of the Slovene immigration in the U.S. (and emigration in general) requires a holistic approach that can be achieved only through interdisciplinary collaboration.

Geomorphological and Speleological Study of Muradi Cave in the Racha Limestone Massif (Country of Georgia)

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Georgia is home to multiple, widespread limestone massifs with well-developed karst areas and their associated landscape features found throughout the country. The limestone massifs occupy important territory of Georgia, which includes over 1,500 known caves. In this work, we present geomorphological and speleological study of Muradi Cave in the Racha limestone massif, which is a classic geomorphic region throughout the Caucasus in terms of the development of karst processes and landforms. Muradi Cave is unique as the fact that it contains almost all types and subtypes of speleothems and cave sediments recorded nowadays in the caves of the whole Caucasus region, and the mineral aggregates found in the Muradi Cave are very rare for the caves of the Caucasus region. The primary objectives of this study of Muradi Cave included undertaking important investigation in this country, to better understand the speleogenetic processes.

Indigenous Urbanism in Canadian Cities: Reclaiming Hidden Urban Geographies

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Many countries around the world are contending with how to bring the hidden geographies of Indigenous peoples into the place-making processes of our contemporary cities, taking new approaches, or normalizing experimental approaches, to urbanism that relate to Indigenous communities with rights to self-determination and recognition as sovereign peoples positioned alongside the settler state. The right of Indigenous self-determination is upheld in the United Nations Declaration on the Rights of Indigenous Peoples. In the national imagination and universe of political discourse framing countries like Canada, discussions of self-determination in reserve, rural, and remote Indigenous communities are more commonplace than discussions of how to co-exist and co-produce cities where the great majority of people live. This paper examines new relationships emerging between Indigenous and non-Indigenous communities and their local governments that are counteracting some of the persistent ignorance of Indigeneity in the production of city spaces, bringing previously hidden cultural landscapes, and marginalized Indigenous protocols and processes, to the centre. Analysis of interview data, documents, and site visits in the Canadian cities of Calgary, Edmonton, Saskatoon, Winnipeg, and Thompson reveals potential for Indigenous urbanism to be strengthened and used in cities across Canada, with lessons transferable to cities internationally.

Geography hidden in the brain

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Geography needs the help of psychology to understand human and animal behavior, sensations, emotions, choices, relations in space and time. With an interdisciplinary approach we will probably be able to answer many questions, hidden in our subconscious, incomprehensible even to ourselves.

Chinese Rural Land Use pattern under the conditions of extra-investment input in New Era

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The extra investments are playing an important role in driving five key village productive factors variation: 1) the government policy realization of rural revitalization; 2) new industrial type and size; 3) rural local cultural resource finding and exploitation; 4) local government's land use planning adjustment; 5) farmers' economic development willing. Therefore, under the conditions of extra investment input, Chinese rural area is experiencing great change. Especially, land use as the first productive element to respond to investment has many direct different features of trend in the rural area. Some typical pattern features are concluded as follows: 1) the new industrials go into village and change its industrial structure of land use; 2) traditional agricultural land uses transfer non-grain crops planting, such as flowers, medicine herbs, which increase the press of food security; 3) to ecological restoration and landscape reconstruction more attention is paid by local government and investors; 4) rural infrastructure land use is increased noticeably (for example, water supply, trash processing, logistics system).

Determinants of environmental perceptions and attitudes in Gauteng province, South Africa

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In environment-nature discourse, determinants of environmental perceptions and attitudes vary significantly making it difficult to draw generalisations on their significance for particular locales. In this paper, we explore the key factors affecting environmental perceptions and attitudes for a unique, socio-economically diverse area of Gauteng province, South Africa. Personal level variables like sex, education level, economic status, age, population group, migration status and an external variable such as dwelling type, obtained through a questionnaire, were assessed as determinants of perceptions and attitudes. Non-parametric multivariate Bayesian analysis was applied to determine the strengths of the determinants of perceptions as well as attitudes. Results indicated that education level was the strongest predictor of perceptions (p value = -0.110) whilst population group was the strongest predictor of attitudes (p value = -0.066). Age, however, was rated highly in previous studies, but came out as an average predictor of perceptions and attitudes in our paper. Dwelling type came out as the weakest predictor of both perceptions and attitudes (p value = 0,143 for environmental perceptions and 0,045 for attitudes). The results presented can provide a foundation for segmentation of anthropocentric factors for environmental planning and strategy formulation within the province.

Pre-service Geography Teachers Conceptions of Geography: Validation of a Questionnaire

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Pre-service teachers are seen as key players in building the image of school geography in the near future. The focus of the inquiry is to identify existing (prevailing) conceptions of geography education of Czech pre-service teachers. The study was built Castling's (2004) classification of geography conceptions which defines the following (prevailing) conceptions: Globalist, Earthist, Interactionist, Placeist, Localist, Environmentalist, Synthesiser, and Facilitator. We elaborated the classification in 45 questionnaire items in order to validate a theoretical model. The sample of the survey consisted of 183 Czech secondary geography pre-service teachers recruited from all higher education institutions preparing geography teachers in Czechia. The model was analysed by structural equation modeling, item analysis, and cluster analysis. As it is the first adaptation of the model, we pay attention to difficulties brought by the empirical validation of the questionnaire. The findings suggest that, among all conceptions, Czech pre-service geography teachers tend to Interactionist and Localist conception mainly. The findings are discussed with the research results from our previous qualitative study.

Catling, S. (2004). An understanding of geography: The perspectives of English primary trainee teachers. *GeoJournal*, 60(2), 149–158.

A case study of soil sequence on hard carbonate rocks in Slovenia

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The studied soil sequence is located in the transition between two mesoregions: the Ljubljana Basin and the Polhograjsko hills, west of Ljubljana capital city. The sequence is typical for this region and represents a soil genesis on different slope positions on the carbonate parent material. The study offers also the WRB classification and naming.

YOUrALPS - Educating youth for the Alps: (re)connecting youth and mountain heritage for an inspiring future in the Alps

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Worldwide, specialists diagnose a lack of contact between young people and their living space. Among Alpine youth, this situation leads also to the dying out of Alpine identity and mountain-related know-how. Mountain-oriented education (MOE) plays a key role to instil in young generation the sensibility and knowledge of Alpine cultural and natural heritage and by highlighting opportunities for their future. Various educational programs have already taken place especially in the non-formal education realm, but a strong development of the MOE approach in the formal education is a challenge in the whole Alpine region. The YOUrALPS project tackles the challenge to raise youth awareness of Alpine heritage by supporting MOE process via better interconnectedness of formal and non-formal educators and Alps-wide inclusion of MOE in the educational curricula and practices.

Online communication as the development prospect of inbound tourism in the Urals, Russia

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The study analyzes the development prospect of inbound tourism in the Urals, taking into account trends in the world tourism and the problems of cultural adaptation of the realities for foreign tourists. It is difficult to overestimate the importance of tourism in the modern world. Connected with the transport network, hotel industry, socio-cultural activities, it becomes one of the most important factors in the development of the region. However, when discussing the conditions for the development of tourism, it is impossible to ignore the issue of tourist attractiveness of the region. Among the main trends, it is worth noting the increase in the share of individual tourism, which makes tourists more independent from mass offers, and travel agencies are able to promote a unique product to the market that is obviously targeted at a narrower audience. Today, travel enthusiasts are not limited to relaxing on the shores of the warm sea, but visit nuclear power plants, conquer the North Pole, and prepare to fly into space". This change opens up new perspectives for many regions of our country, since it is possible to make the object of tourist interest completely atypical landmarks.

Staged settlement system model: A regionless description of human spatial organization

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The development of human society has three generally recognized stages: pre-industrial, industrial and post-industrial, which were also reflected in different types of spatial organization from autonomous units through a highly structured hierarchy to an organic system with highly interconnected equal members. These three stages can be detected in different areas of current settlement systems by examining spatial interaction data. Through these stages two algorithms for

model settlement system structure, based on commuting data, will be presented and evaluated on case studies in Central and Eastern Europe. A comparison to traditional region delimitation approaches will be shown along with a method to transform the settlement system model to a system of regions.

Cocoa agroecosystems mitigate soil degradation and enhance carbon sequestration compared to full-sun monoculture on tropical alfisols

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Soil degradation results from processes which lessen current or potential capacity of soil to provide ecosystems services as desired by stakeholders. Agroforestry systems (AFS) have the potential to mitigate soil degradation and sequester carbon in agricultural landscape due to their continuous vegetation cover, diversification of production, effective nutrient cycling and biodiversity conservation. Traditionally, cocoa-based agroforestry systems (cAFS) have been practiced as sustainable land use systems among smallholder farmers in West and Central Africa. However, in recent times, a large body of literature suggests that cocoa production has become more intensified by replacing cAFS with full-sun cocoa monoculture (cM) in several cocoa producing countries, including Nigeria. For the purpose of this study, we selected a total of 56 mature productive cocoa farms, from 8-20 years old and built a typology of cocoa ecosystems using a cluster analysis of density of cocoa, density of associated plants, basal area, overstorey crown coverage percent, number of species and species diversity. The resulting cocoa production systems were classified as light shade cocoa agroforest (LscAFS), high shade cocoa agroforest (HscAFS) and cocoa monoculture (cM). Soil samples collected at a depth of 0 to 20cm under each production system were analysed for twenty-three soil properties. The results were compared to those under natural forest reserve (NPFR) in the same vicinity.

The monastic Carthusian space

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The Carthusian monks spend their extraordinary existence in an atmosphere of great contemplative silence and total hiding, protected by an extremely rigid form of enclosure, so much so that their monasteries are also called simply "deserts". The monastic Carthusian space constantly proposes a (functional) organization of the environments strictly dependent on the monks' peculiar kind of life, as specified in the Statutes of their Order, although from time to time harmoniously adapting also in creative terms to the morphological specificities of the different sites. Undoubtedly the Carthusian monasteries constitute a paradigmatic example of hidden geographies. They can however be "discovered" to some extent through an accurate reconnaissance of the precious testimonies - more or less well preserved and valorised from a cultural point of view - that the Carthusian monks have left in the places where they have lived in the past. Such testimonies can also be found in the territories of the Alpine-Adriatic region, i.e. within the current borders of Slovenia and Austria.

Factors affecting the migration of Afghans

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The main objective of this paper is to identify the factors of Afghan immigration. Based on library research and descriptive method, the causes of Afghan migration are deeply rooted in political,

security, economic, social and cultural issues. Each of these factors has contributed to the migration of Afghans to other countries. The current situation in Afghanistan has been at one of the critical stages. The continued existence of suicide bomber and air strikes, the killing of civilians and people, the lack of security, the lack of jobs and the poor economy, and corruption and disinformation have led to the massive migration of young people and women. The main problems facing Afghanistan have been the growing threat of Al-Qaeda and Talib groups, and, on the other hand, the weaknesses and weaknesses of the Afghan government in managing this situation and in combating it and creating ethnic cleansing have led to a massive increase in the number of Afghans Immigrant to the world

Symbolization in (of a) space. Theory and practices

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The article discusses the symbolic space and the process of symbolizing the space. Symbolization is a process of establishing a symbolic link between objective matter (place, object or/ and space) and subjective nature of human perception to material things; this is a very complex process. The symbolization of space covers various objects that have some significance for certain groups of people and identify with them. The symbolic points, objects, places and even larger territories acquire the exclusive characteristics of representing the wider space and human communities, and indirectly influence the structure of this space. By this way, symbolic places etc. become an influential factor. On the other hand, human communities knowingly strive to create certain objects in "symbolic". The process of symbolization is a planned process of transforming the material substance into symbolic, whereby "matter" (objects, locations etc. in the space) first obtains additional symbolic value and role (subjectively from the point of view of the human community), and then it begins to structurally change itself and influence to the surroundings. We can also talk about the symbolization of space as a form of spatial management. The article has three main parts: theory about the phenomenon and processes, Slovenian practices and, in the last part, about the spatial symbols-management.

Vision through space and time. The geography of mystics

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In a cultural horizon characterized by remote sensing, geographical knowledge has become accessible in real time at every point of the globe. The distance factor is going to somehow dissolve. Consequently, what we can still call *terrae incognitae* being far from our direct observation are to be sought within specific niches, which in the past geographical research tended not to consider. This leads on the one hand to the deepening of issues regarding man as a social being, and on the other to reason less in terms of spatial distances and more in relation to temporal distances. It is not only a problem of historical geography. In a world that is changing before our eyes with increasing speed the future too becomes an object of preventive knowledge, as a planning exercise which emerges as necessary to any scale of organisation.

Man and nature, past and present, have always found occasions of synthesis in a particular typology of people, mystics or visionaries. Historically, they have represented a form of heterodox knowledge, which man has tried to control without ever being able to dominate it. This has led to its exclusion from the field of science, thus representing a typical case of hidden geography. More recently the cultural turn impressed by postmodernism, by detaching geography from neo-positivist settings has laid the foundations for a rethink of the issue. This paper compares the geographical visions of some mystics who have lived in Europe over the last two centuries

Awe, Wonder and Pure Power: unlocking the powerful knowledge of physical geography

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The physical world is full of awe-inspiring examples that can engender sensory and emotional responses, sometimes referred to as a 'wow' factor. These can be useful as starting points for teaching but for a deeper learning experience both teachers and students need to probe beyond the 'obvious' and release the 'hidden' physical geography. The hidden lies in the abstract and conceptual ideas that emerge from a broader established system of disciplinary thought, which has been termed powerful disciplinary knowledge. Powerful knowledge exists outside the everyday or direct experience of the teacher and the learner and may be counter-intuitive at times, especially in the face of awe and wonder experiences. Enabling students to make sense of physical geography through the lens of powerful knowledge provides the intellectual power for students to develop new ways of seeing and to place aspects of the physical world in proper context. To reveal hidden physical geography teachers need to engage with deep thinking about the subject and what this means in terms of powerful knowledge. In turn, this enables teachers to prioritise and underpin how they shape the curriculum and their classroom teaching, and to devise teaching approaches that can engage students to reveal and encourage exploration of what would otherwise remain hidden or mysterious to the student.

Inquiry learning in teacher-training: A chance for professional development

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In current teacher training, inquiry learning, and thereby above all the newer approaches influenced by constructivism and grounded theory, which focus on the learning individual and the social dimension of learning processes, are considered to have an important mediating function (Metzger 2008, Schneider & Wildt 2009). But also for teaching and learning science and social sciences the development of appropriate research skills is considered as an important educational goal. Therefore the required teaching approach should both, promote interest in primary science and social sciences (OECD 2006), and improve the understanding of scientific concepts (Harlen, Artigue, Dillon & Lena 2012).

But which key factors for success are necessary to satisfy the high demands of inquiry learning in primary science and social science education as well as in teacher training?

And how do teacher training students rate inquiry learning approaches with regard to their own professional development as well as concerning the promotion of the appropriate research skills in teaching and learning?

The paper analyzes the limits and possibilities of inquiry learning in teacher education, based on the example of the study project in primary science and social sciences (Sachunterricht) at the University of Cologne.

Making (invisible) air pollution visible: A scientifically sound methodology to include air pollution data in (routing) applications

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Air pollution (AP) is difficult to detect with our human senses even though it has severe (invisible) impacts on health, environment and socio-economic processes. Cyclists and pedestrians often commute in polluted air without being aware of it. They often have a close proximity to traffic during travel. Our research highlights spatial and temporal patterns of AP exposure for cyclists and pedestrians during travel and investigates the added value of integrating AP data in routing apps, making visible the AP pedestrians and cyclists are exposed to during travel, allowing those commuters to lower their AP exposure while traveling. A reduced exposure to AP results in more positive health outcomes, a reduction of health care costs and boost of the economy. In addition, integration of AP data with a high spatial resolution in (routing) applications raises awareness about spatio-temporal patterns and causes of air pollution with also potential benefits for education, policy-making, ...

We compare modeled concentrations of various air pollutants for different road types and routes. Concentrations of black carbon and Nitrogen dioxide are significantly higher on roads with intensive road traffic compared to roads with less traffic and cycling highways. The amplitude depends on both temporal (season, day of the week, time of the day), and spatial context factors such as density of motorized traffic, geographic location of the footpath or cycle lane, and meteorological conditions.

"Hidden opportunities" of cross-border relations between the Russian Federation and the Republic of Kazakhstan: economic and geographical aspect

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The collapse of the Soviet Union and the transition from a planned-administrative model of development to a market economy created the conditions for changing the sectoral and territorial structure of the post-Soviet states. The past thirty years have clearly demonstrated the so-called "hidden opportunities" for the economic development of the Russian Federation and the Republic of Kazakhstan in the border regions. This report will demonstrate how the "growth poles" and "added value chains" of transnational capital of the two countries emerged on the longest land border (7,500 km) of Russia and Kazakhstan, which used the competitive advantage of cross-border economic relations in their favour. Special emphasis will be placed on the role of the Eurasian Economic Union, which simplifies the movement of capital, services, goods and labour in the border agglomerations of Russia and Kazakhstan.

Analysis of air temperature seasonality and its correlation with large-scale atmospheric circulations: case study from Slovenia, Croatia and Serbia

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In this study are analysed air temperature seasonality and their correlation with large-scale atmospheric circulations over Sava river basin, i.e. over the territories of Slovenia, Croatia and Serbia. We used daily air temperature measurements from 12 meteorological stations for the period from 1981 to 2010 (30 years period). Furthermore, mean (T_a), maximum (T_{max}) and minimum (T_{min}) daily temperatures were included in the analysis. The temperature values are correlated with atmospheric circulation patterns (ACPs), i.e. with Arctic Oscillation (AO), North Atlantic Oscillation (NAO), Antarctic Oscillation (AAO), Pacific-North American (PNA) and Mediterranean Oscillation (MO) indices for the same research period. The daily air temperature data were obtained from European Climate Assessment & Dataset (ECA&D). All daily air temperature variables are homogenized and prepared for calculations. The results show increasing trends of air temperatures,

mostly during winter, spring and summer seasons, in general. Furthermore, the correlation outcomes present influence of ACPs on seasonal air temperatures (T_a , T_{max} and T_{min}), but the dominant effects are different based on type of ACP as well as on different season level.

A Study on the Formation of Landscapes and Resident Consciousness in Japanese Castle Towns: A Case Study of Kitahoricho in Matsue City

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Currently, people are focusing on regional characteristics of particular communities in Japan. A similar tendency can also be seen concerning landscapes in tourism-oriented communities and local revitalization efforts. While the government has enacted some laws for landscape improvement, residents' houses are unlikely to be targeted by this legislation because most people perceive the exterior of a house as a personal matter. We can find them near historical structures, such as castles. A castle becomes key in landscaping. In the case that residents perceive characteristics that are relegated only to their region, to what extent should historical atmosphere be considered? Residents' feelings in such contexts have not been well-researched.

In this study, I examine Kitahoricho, which has a castle and an old atmosphere. The area exhibits a standard of landscaping. This study was developed with two aims: clarifying the relation between residents' feelings and the development of the housing landscape and outlining the problems and conceptions of landscaping in castle towns. The primary method consisted of interviews with local government officials and research conducted on building styles. Questionnaires were also utilized to understand residents' consciousness of landscape. The results indicate complex feelings of residents toward this issue. Additionally, the results show that residents' background differ with residential quarters and it affect formation of landscapes.

Modelling Green Corridors in Natural Reserve Regions, Izmir Province, Turkey

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Habitat fragmentation is a major driver of today's ecological and biological problems. Like other countries on Earth, Turkey has foresty areas which are an intensely fragmented and important ecological hotspots. Landscape management, aiming to reconnect isolated vegetation patches through corridors is important to mitigate impacts on fauna and flora species due to habitat degradation and fragmentation. In this context, the objective of this study was to analyze the landscape pattern and submit proposals for creating green corridors in Qualified Natural Reserve region in Izmir Province, Western part of Turkey. For this purpose, stand maps of forest management plans, prepared in 2008, were utilized as the main data source in the analysis. The corridors were created by using ecological nodes that show the centres of the most suitable areas and also the current protected lands. The most suitable areas were based on corridors analysis, considering landuse-landcover, declivity, permanent preservation areas and forest fragment sizes. We used different pattern metrics in order to measure diversity of patches in a circular neighborhood. Land Facet Corridor Designer was used to create a corridor. A single corridor was designed to optimize connectivity for high diversity of patches. Although the predominant class sizes in the study area are small fragments, landscape pattern analysis has shown good environmental quality for fragments patches that do not lose their core area, even for the largest edge distances. The recommended corridors were effective in using the largest fragments, which have the least edge effect and provide necessary support for most wildlife. In conclusion, our model proposed in this study, could manage the entire landscape to promote connectivity for species, biological communities, and ecological processes.

Forum Theatre – Method of Temporary Participatory Planning of the Someșul Mic River in Cluj-Napoca, Romania

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In this paper, we will present the research results focusing on the forum theatre as a method of temporary participatory planning of the Someșul Mic River in Cluj-Napoca, Romania. The forum theatre is a non-formal education method, the purpose of such research is to achieve inter-human connections through various techniques. Besides the non-formal framework, the natural environment will be presented by the contribution of the Someșul Mic River to this activity, as well as to the local community. The starting point of this research is how the local community will collaborate on the deployment of such an activity. In order to verify the feasibility of this activity, we used the semistructured interview, while collaborating with various non-governmental organizations, university students, and professors. The statistics obtained as a result of interviewing inhabitants of Cluj-Napoca will be reflected in the future organization of such an event. The conclusions focus on the impact of non-formal education on improving human relationships, but above all on overcoming the existing boundaries in a community.

Bringing to Light the Hidden Cultural Geographies of Cluj-Napoca, Romania

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Our research analyses and presents the results of a project implemented in Babeș-Bolyai University, Cluj-Napoca, Romania, through an internal fellowship supported by The Institute of Advanced Studies in Science and Technology – STAR-UBB Institute. The project aims at realising a digital open-access product, which will enable the inclusion of two theories of Human Geography, equally relevant to other fields (Sociology, Architecture, Anthropology, etc.): the theory of representations and the non-representational theory. The created digital product is an interactive map of Cluj-Napoca showing the transformations of the urban area in the 20th century to the present day, using diverse types of images, some of them ignored in previous research (photographs, picture postcards, remote sensing images, Google street view, etc.). Besides enabling correct learning of the concepts and methods characteristic of the two theories, the product will develop users critical thinking and the necessary skills for realising territorial analyses, where hidden (not yet used, concealed, unrevealed or not interpreted) images can make the difference in better understanding people's living environment. Conclusions include reflections on the impact on the academic environment of the implementation of such a project.

Sustainability Indicators and Markers in Post-Socialist Urban Landscape (a case of Ukraine)

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Sustainability and new urbanism are now the dominant concepts when it comes to modern urban planning and development. They are perceived differently in different countries, at the same time appearing in the Agenda of Urban Policy of most of them, especially in developed countries. Thus,

EU countries are mostly leaders in introducing innovative approaches, providing public participation in decision-making and ultimately creating environment that is comfortable for residents and visitors. At the same time, the issue of a particular city sustainability remains controversial and has been resolved mainly through quantitative evaluation of numerical parameters - energy efficiency, green spaces shares, water and air quality etc.

This is quite interesting in terms of comparative studies, and leaves a little room for evaluating the quality of urban space, the urban landscape, whose language is much more expressive.

This study has been exactly dedicated to the search and visualization of sustainability markers in post-socialist urban landscape and has been conducted on the example of selected Ukrainian cities.

The Hidden Geographies of Green Finance

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The rise of Green Finance in recent years is considered by many to be one of the most promising developments to support environmental sustainability. By channeling funds to dedicated green investments, the services and products of Green Finance have the capacity to substantially contribute to environmental efforts such as climate change mitigation. The bulk of the research has so far been focused on the economic and financial analysis of this market segment and economic phenomenon, and much less attention has been devoted to the geographic aspects of Green Finance. However, this perspective should hardly be overlooked, since the „greenness” of such financial services implies an obvious rootedness into the natural environment.

While financial markets are highly international and global in general, the definition of the underlying green economic activities, the environmental goals pursued and in particular the investments financed by Green Finance instruments can vary significantly. Such differences may to a large extent be explained by geographical factors, for instance by differences in the expected physical impacts of climate change or in natural resources, in addition to geopolitical motivations. The aim of the paper is to shed light on such hidden geographies of Green Finance, which may not only enrich this market segment's understanding and evaluation, but could also lead to some lessons that may be informative for the ongoing international policy discussions.

Youth emigration in Albania

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According to the latest CENSUS conducted in Albania in 2011 its population showed a drop of 8% compared to 2001, from 3069275 inhabitants in 2001 to 2821977 inhabitants in 2011. One of the reasons for this decline is also the emigration of Albanians which has known several phases since the collapse of the communist regime in 1990 until today.

The potential migration of Albania has increased from 44% in 2007 to 52% in 2018. According to Eurostat data, during the years 2015-2017, 132000 Albanians have requested asylum in UE countries and many more have left the country through employment contracts, studying, the Diversity Visa Lottery of USA, applications to Canada etc.

The issue of emigration of qualified Albanian youth has become a topic of debate in Albania where different scholars see it as an emancipation of Albanian society, the government as a global phenomenon and the opposition as a failure of the country's governing politics that will be accompanied by negative consequences for its future socioeconomic development

Through a questionnaire realized with students of the Faculty of History and Philology of the University of Tirana we will analyze how many percent of them want to emigrate and why, how do they see their future in Albania.

Key words: emigration, potential migration, brain emigration, asylum seekers.

Social changes and conflicts in Albania after the 90s. (Vora Municipality)

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Social developments of Albania have been closely linked to natural, economic, political and historical factors due to the impacts they have on the free movement of the population. Migratory movements in Albania, mainly after the 90s, have played an important role in the transformation of socio-geographical spaces, of having a multidimensional impact in the context of transformation and development of the territory and shaping new social characteristics of the population.

Specifically, these transformations are evident in the territorial space of Vora Municipality, which can be identified as a typical case of territorial transformations and social changes of the population, as a result of the geographical position of this municipality. Vora Municipality is located between Tirana and Durrës, the two largest Albanian cities, and has always served as a prime location for the most important businesses and people from different regions of our country, thus creating the "sponge effect".

The main aims of the paper are to identify and analyze the factors that have been influencing the social transformation of this space, the analysis of social effects in the population, to identify the new territorial transformations and the study of the geographical distribution of social conflicts. This study reveals the new social features of the population and the trends of these territories.

Keywords: Territorial transformation, population characteristics, social development, social conflicts.

The hidden geography of old tourism maps - the case of Jizera Mountains

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Under the framework of a project "The old maps of the Jizera mountains" we have gathered the old tourism maps, mainly from the period between 1890 – 1940. Those maps are providing us with manifold picture of mainly tourism in this currently Czech-Polish territory, earlier Czech-German or even Austrian-German borderlands before 1918.

Despite these maps have served mainly for tourists, they included many hidden messages and symbols reflecting difficult geopolitics of the territory, which was inhabited mainly by German speaking population on the both sides of the borders until 1945. Our contribution argues that the barrier function of borders have changed as the border divided different states – Germany and Austrian Empire until 1918 and Germany and Czechoslovakia until 1939. It also reveals that the borders on the maps are of manifold nature and cannot be just curbed to the national borders. It also reveals the levels of interconnections of communities on both sides of the borders by the means of tourism trails and marked routes – these interconnections were more frequent until 1918. We also argue that the old tourism maps can also help to understand political and maybe also geopolitical organisation of neighbouring countries

Tourism spatial planning in Albania

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Tourism is one of the high-priority economic development activities in Albania, taking into account the important natural, historical and cultural resources that this country offers. The contribution of this economic sector to GDP is around 6%, including the activities and support services of this sector.

It is rated as one of the fastest growing economic activities by activating the labor market, improving the level of poverty and revitalizing urban life in mountain and coastal municipalities

However, this activity has been affected by considerable limitations that have become a barrier to further development, such as poor physical and public infrastructure, informal developments in the territory, lack of market and tourist information, poor environmental quality etc.

This situation is directly related to the lack of tourism spatial planning, their integration with the general territorial development strategies, coordination with general land use planning, economic development and community participation in this process.

Tourism spatial planning promotes the economic, social and environmental development while promoting the responsible use of land and natural resources for sustainable development. The process of Tourism spatial planning ensure the protection of natural and cultural assets, increase economic and business returns encourage economic diversity, etj. If planned well, tourism can offer economic growth with minimal harmful impacts on residents' quality of life and the environment.

In conclusion, we will analyze some guidelines and alternatives regarding territorial planning and sustainable development of tourism in Albania.

Keywords: Tourism spatial planning, informal territory development, sustainable development, etc.

The role of the geographer in the study of rural territories In Albania

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Since many decades, rural areas all around the world have caught the attention of several researchers e.g. geographers, economists, demographers, agronomists, sociologists, ethnologists, etc. This growing interest has lead to the conduction and publication of many scientific researches, the organization of several conferences, seminars and workshops, the elaboration and implementation of projects, etc., aiming to analyse and resolve the problems concerning these prosperous yet fragile areas.

In Albania and particularly in geographic studies, the research on rural areas is still limited, due to several factors such as: the evolution of geography in Albania, as a domain that keeps being identified almost entirely with teaching, therefore lacking a solid research dimension; the politic-economic context of the country during 1945-1990, when the evolution of geography, like all other human sciences, was dictated by communist ideology and when rural areas were considered only as providers of agricultural production; the orientation since the beginning toward the Russian geographic school, focusing mostly on issues related to physical geography, etc.

Nowadays, no matter the background, the inclusion of rural territories in intense developmental dynamics, in demographic, social, economic and environmental terms, the changing of relationships between rural and urban areas, the diversification of rural economy, etc. has highlighted the need of deeper and more complex research on these territories, where the geographer could and should give its contribution.

GIS evaluation of the most suitable areas for new vineyards: Case study of Fruška gora wine region (Vojvodina, Serbia)

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Terroir is a powerful geographical concept that implies that the characteristics of each wine come from the natural environment in which the grapes are grown. Numerous elements fall within the concept of Terroir. The most important of them are certainly physical geography factors such as climate, geology, soil and relief. The main goal of this paper is to define the most suitable areas for new vineyards in the Fruška gora wine region. Since a part of Fruška gora is a National Park, besides the basic criteria related to physical geography, additional ecological criteria have been introduced so that viticulture would not endanger important National Park habitats. Values of the criteria necessary for evaluation are adapted to the Fruška Gora wine region, which as a lone island mountain in Vojvodina enjoys special geographical conditions. Each criterion has a degree of importance and a rating scale. The processing, evaluation and display of data was performed by using ArcGIS software. As a result, a map with multiple levels of suitability for raising new vineyards was presented, as well as an assessment of the location of already existing grape vines.

Exploration of Population Movement by Volunteered Geographic Information

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Big data excavation is an emerging research theme in 21st century. Volunteered geographic information (VGI) is one of the big data applications that takes advantage of spatial information specifically. It is developed in terms of the emerging of web 2.0 and GIS positioning technologies. This web application facilitates participatory and sharing geo-tagged information on the web. This research aims to employ VGI method on the analysis of population movement. The research design focuses on population movement between cities/counties. We use 2 million geo-tagged photos posted on flickr web album from 2006-2015. The space-time clustering method is employed to identify events and trips. Consequently, movements between cities/counties can be identified. Results will contribute to transportation planning, facility allocation and prevention of disease diffusion.

Keywords: volunteered geographic information, VGI, population movement, space-time cluster analysis

Improvement of flood risk mapping of urban areas using Unmanned Aerial Systems (UAS): A case study from the Rositsa river, Bulgaria

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The elaboration of flood risk maps represents a direct commitment of the EU countries resulting from the requirements of the Directive 2007/60/EC, known as "flood directive". According to this directive the risk maps need to indicate the potential impacts and consequences from a flooding under several probabilities, in terms of indicative numbers of inhabitants, types of economic activities, installations and protected areas which might be affected. In this article we present the approach and methodology used in the preparation of the flood risk maps within one of the designated Areas with

potential significant flood risk (APSFRs) in the Bulgarian part of the Danube river basin, located in the valley of the Rositsa River, which historically has a relatively high incidence of flood events on a different scale. The applied methodology integrates the GIS based multi-factorial analysis of digital geographic referenced data on the flood hazard and the vulnerability variables, with the operational capabilities of relatively new geoinformation technologies such as specialized unmanned flight systems for operational collection of accurate geospatial data. This methodology achieves greater reliability of risk maps, combined with improved positional accuracy and detail of the information on the actual vulnerability of potentially affected geosystems and their components.

Integrated geoinformation approach to study of complex urban cultural heritage landscapes

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Contemporary geoinformation technologies are widely used in cultural heritage activities and becoming more and more important. They are offering innovative tools for studying and analyzing of spatial structures, which makes them very effective for investigation of complex cultural heritage objects, such as historical urbanized landscapes. In this article we present the approach and methodology, which has been used in the study of old Roman town of Hisaria in Bulgaria. This approach integrates the application of GIS tools for collecting geographic referenced data and generation of geospatial information, Unmanned aerial systems for operational collection of accurate geospatial data and methods and techniques of traditional diachronic analysis.

Hidden aspects of geography in the processes of transformation of the city of Burgas in “smart city”

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Key words: hidden geography, smart city, innovations, urban planning

Geography is not only a science which explains the location of different objects in the space. Geography is something more - it is a science that occupies a central place in our lives, in our decisions where to live, where to work, where our children will learn, and so on. 80% of the information we use every day is spatial (geographic).

Nowadays geography is a science of everything, it is a knowledge about the world and

Human related processes, about their evolution and impact of given territory. Geography is about where things/ objects are, they are absent, where they should be and where they shouldn't be.

In this article geography is considered, as a new smart platform for improving the quality of life, while preserving the environment.

We will show how geographic approach plays a major role in the transition towards smart city in Burgas.

The city of Burgas is situated in the south eastern region of Bulgaria on the Black Sea seaside and has a territory of about 48 200 hectare. Burgas is the fourth largest city in Bulgaria and it is an important industrial, cultural, and administrative center of the south-east region. It also serves as an important commercial and transport hub, with an international airport that handles more than 2.5 million passengers annually and one of the biggest ports on the Black Sea Coast. The City of Burgas is with population more than 313 566 inhabitants (2018). The main issues facing the City are the continuing urban spread and increases in population through inward migration from other parts of the country and beyond as the economy increases and develops. Population growth is limited by the Black Sea on the east side and a few lakes. Therefore the only way for city managers to meet the

needs of the growing population is the city's territory to be expanded to the north, south and west in the nearby settlements of the municipality.

In last years the power of "place" plays a major role in decision-making processes in the city of Burgas and through right questions (where things happen, where assets are located, where territory is prone to certain problems, where resources are best deployed, where territory is not provided with transport network and etc.), city managers have succeeded to answer them and now Burgas is first Bulgarian city in which real smart solutions are being implemented, that are improving quality of life of citizens every day, while safeguarding their territory.

In the article smart projects and hidden aspects of taken geographic innovative solutions will be analyzed, which transform the city of Burgas towards first smart city in Bulgaria.

Place Names as a Form of Hidden Geography

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A place name is a major component of people's perception of a place. This perception when turning into an aggregated form with sustainability becomes culture and history. As a place name contains a number of hidden aspects of culture and history, as well as political and economic ramifications, it may well be stated that place names are a form of hidden geographies. This paper aims to identify some hidden aspects of place names and suggest how to approach them in a more systematic way of thinking.

Breaking barriers of outdoor education

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When implementing outdoor education, the teachers often undertake a great deal of responsibility for their students. Many teachers also assume that the safety risks inherent in this form of education are higher than those present in the classroom setting. This is one of the reasons why teachers often refuse to organise their lessons outside school. Barriers of outdoor education were analysed in several education systems (Boardman, 1974; Smith, 1999, Han & Foskett, 2007; Waite, 2009; Yang, Wang, Xu, & Deng, 2014). The paper introduces prerequisites and barriers of outdoor education by the view of 38 Czech elementary school teachers with whom a semi-structured interview was conducted. Many elementary schools in the Czechia still have no concept of outdoor education, and teachers have problems with utilising the prerequisites and overcoming the barriers of outdoor education. Therefore, the teachers need better methodologic help with examples of outdoor activities which are presented in newly designed Concept of outdoor education for elementary schools. It proposes principles on how to incorporate outdoor education into elementary school curriculum and organise outdoor education at elementary school as a comprehensive system (place/topic/time-related). This paper introduces partial results of the project 18-08315S supported by Czech Science Foundation.

The fourth industrial revolution's implementation – the Slovenian case study

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Digitalisation and automatization have been changing the economy since the digital revolution from 1969. A characteristic of the ongoing fourth industrial revolution are cyber-physical systems which

communicate with one another. Every step of the manufacturing process is aimed to be interconnected in the Factories of the Future. Their characteristics and initiatives will be presented in the first part, not neglecting a working force and an environmental perspective. The role of geography on that developing field of study will be tried to be determined. In the second part of the presentation, the Slovenian companies' characteristic on topics of digitalisation and (potential) use of high performance computing in automotive and electronic sector will be presented, based on statistical data and data gathered by questionnaires. The results show that the Slovenian economy is on the initial phase of new technological development with some successful implementations.

Hidden borders as a serious obstacle to the organization of public passenger transport

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The borders between member states of the European Union do not represent an obstacle for travelling with personal vehicles, especially within the Schengen Area. Sadly, this does not apply to public passenger transport. The increased cross-border connections and greater number of daily cross-border migrants to work and partly also to school have not been followed by the offer of public passenger transport. The number of long-distance bus connections is increasing, but the local cross-border connections are either practically useless for the needs of daily migrants or they are completely non-existent. The Slovenian border regions are very poorly connected with neighbouring regions in Austria, Italy, Croatia, and Hungary, but similar gaps can also be found along other borders within the European Union. The reason for these gaps are administrative barriers that impede the introduction and possible subsidies for cross-border lines as part of a public service. The solution to these issues is in-depth collaboration between border regions and a joint planning of the public passenger transport. This article analyses the growth of cross-border mobility in the past 30 years compared to the development of public transport and illustrates examples of good practices.

Objective and subjective assessment of the quality of habitation in the "invisible" Roma neighborhoods: a case study of Harman Mahala, Plovdiv

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Over the last decades Bulgaria has seen a clear trend of growing number of Roma population residing in cities. In most cases, the Roma residents inhabit existing Roma neighborhoods or form new ones. The intensive change of the Roma neighborhoods both in a horizontal (spatially) and vertical (in height) aspect are difficult to trace considering that most buildings are illegal and in most cases not depicted on cadastral maps and urban plans, or - due to the rapid expansion of illegal construction - the existing plans do not represent the real situation. These neighborhoods remain "invisible" to the majority, as they are excluded from their minds as possible places of habitation and in their essence represent a type of unused spaces. This paper proposes a methodology by using data obtained from aerial photography with the use of unmanned aerial vehicle and subsequent processing of the obtained images, which compensates for the lack of information on the current state of the housing stock. Spatial data are combined with field studies, quantitative and qualitative methods of gathering information, which complement both the objective assessment of the habitation environment and its subjective assessment (or the manner in which the residents of the neighborhood perceive the city, their neighborhood and homes) of the Roma neighborhood of "Harman Mahala" – Plovdiv, Bulgaria.

Promotion of Jewish tourism in Japan: Revival of the forgotten Japanese diplomat Chiune Sugihara as a hero for saving refugees during the Holocaust

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This study focuses on the utilization of heritage related to the Holocaust in the field of tourism in Japan, based on the case of Chiune Sugihara, the Japanese diplomat who saved 6,000 people of Jewish origin by issuing them visas to escape from Nazi-occupied territories via Japan. Sugihara is now a well-known hero in Japan but was forgotten after the war until the State of Israel honored him as one of the Righteous Among the Nations in 1984. Since then, many sites, facilities and documents related to Sugihara's life and efforts to save Jews have been designated heritage. In the 2010s, the five local governments of Japan began a new project to attract Jewish tourists to their cities and towns by using such heritage sites and memorials. This study examines how the project was introduced and promoted, through interviews with the local governments' officers. It also touches upon the political intentions of the Japanese state government with regard to the heritage related to Sugihara. Sugihara's 'heroic' act may be used by the Japanese state government in an attempt to offset the reputation of Japan, which has often been criticized for its inhumane treatment of people during the Second World War.

Automated detection of buildings using photogrammetric point cloud

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Nowadays, we face an unseen proliferation of photogrammetry and aerial surveys, which is the consequence of the availability of the techniques due to the recent technical developments, and the reducing costs. Aerial imaging combined with the possibilities of photogrammetry provides orthoimages, i.e. aerial photographs without perspective or vertical distortions. Furthermore, the raw images taken from the same ground objects ensure us to create digital surface models; thus, depending on the specific features of the applied cameras we can produce very high resolution digital data (with 2-15 cm spatial resolution).

In this paper, we applied the images of an aerial survey and we proposed a workflow of an automatic building object detection. The basis of the methodology was a point cloud derived from the aerial images with photogrammetric methods. Roof structure segmentation was performed using digital image processing with the use of pixel homogeneity and heterogeneity of segments. The goal of this work is to detect building boundary which allows to create 3D building model in generalized form. In addition comparing the result with LiDAR reference layer we demonstrate the accuracy assessment of the method.

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Image of Turkey in the Narratives of Foreign Solo Women Travellers

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The research aims to find out how turkey is perceived as a tourism destination by foreign solo women female travellers. In the research twenty foreign solo female travellers' online blogs narratives was

analysed via content analysis method. The results revealed that, each blog mainly contend about travelling to Turkey safe or not and provide a list of safety tips for solo female travellers to avoid or minimise the probability of becoming part of unsafe circumstance such as dressing appropriately, avoiding unwanted attention, being aware of the surrounding, being smart and alert, pretending to be married. Most travellers, who had concern pre-travel, asserted that they felt safe travelling through Turkey. After the travel, they describe their Turkey travel as favourite adventure, wonderful experience, memorable and comforting trips and suggest other solo travellers to go. On the other hand, narratives of female solo traveller have common idea gendered risk in Turkey and they engage in various risk reduction strategies such as avoiding hanging out late at night, avoiding eye contact with men. Besides the safety, Turkey is generally identified as a dichotomy like conservative-liberal, modern-ancient and western-eastern. In addition, they represent Turkey as a favourable country which has hospitable, warm and friendly people, beautiful landscapes and natural attractions, food culture, cultural and historical attractions, quality of transportation, good climate.

Geology revealed – geological contents in Slovenian curriculum and textbooks

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Teaching of geology from early formal education is crucial for the proper understanding, importance and preservation of the planet Earth, as well as its significance of the role of geology for the environment and society in which we live. The goal of the research was systematic analysis of Slovenian curriculum in order to gain insight into the teaching of geological content in primary schools and gymnasiums. Besides, we reviewed geological content in valid textbooks. In order to identify the complexity of learning objectives all geological content was evaluated according to Bloom's taxonomy.

Geological topics in Slovenian school system are indirectly already present in kindergartens, through learning of materials and landscape, while the first learning geological goals appears in 4th grade of primary school. Geological contents are dispersed among several obligatory objects such as Geography, Natural sciences, Natural sciences and engineering, Society, Biology and in optional subject Environmental education. Learning objectives in curriculum do not represent an adequate basis for cross curricular activities and spiral learning. Geological content in textbooks is often insufficient and professionally inadequate, several important topics are also omitted. Until the curriculum learning objectives are reorganized, the current situation of geological topics can be improved by additional professional educations of teachers and/or their with collaborations geological experts.

Hidden Meanings of Landscape and Human Landscape Perception

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Man interact with environment in many different ways. This interaction has increased even more, because of population growth and increasing needs. It is therefore imperative that land we have should be carefully planned and properly managed. This study is an exploratory study into how different groups read landscapes where they live, and also how they are thinking different from real situation. The aim of the study is to show the differences or similarities between results of metric analyzes and people's perception. In the study, we used surveys to reveal human landscape perception, and used landscape metrics and landscape indices for the characterization of real landscape structure. The Urla Peninsula in Izmir, Turkey used to explore this topic. If the inhabitants do not have a complete idea of what is going on in the landscape, it cannot be expected to be in the

protection activities. Important thing is that how the inhabitants classify the landscape and what they think about landscape quality. In the study, while landscape metrics show the sensitivity of the landscape, the people focused on tourism are not care about the basic values of the landscape. From the perspective of landscape ecology, the most important feature of the landscape is increased rates of habitat loss and fragmentation. Urla's landscape changes should be planned and managed in a way that takes account of stakeholder perceptions and seeks to maintain, both landscape experience and ecological functioning.

Keywords: Habitat Fragmentation, Landscape Metrics, Human Perspective.

My Story Map: how to tell a life story

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The project "My Story Map" has two main objectives:

- To motivate youngsters who have dropped out of their education to re-enter their learning pathway.
- To avoid early-school withdrawal of students at risk of dropping out.

The project started with a desk research focusing on two key areas:

1. the current situation regarding prevention of, intervention against, and compensation of early drop-out from education and training in the countries participating in the project (FR, AT, BE, IT, ES) and at European level (progress made within the strategic framework Education and Training 2020)
2. a synthesis of the present state of research on the impact of story-telling and digital mapping on diverse target groups

Special emphasis was placed on conclusions and recommendations for the development of the educational outputs of the project. These outcomes form the basis of the learning modules aimed at engaging directly early-school leavers in an educational action as "digital peer educators" by implementing digital story telling and digital mapping with young people, who will produce their life stories through the digital maps.

The resulting digital products will be organized, enriched with extra related content (such as video, photos, audio messages, etc.) and showcased in an online exhibition which will be part of a communication campaign (StarWall) aimed at using the social networks as a mean of dissemination of educational messages.

www.mystorymap.eu

Social mix Policies in the French Eco-districts: Discourses, Policies and Social effects

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Since the 1980s, the issue of social mix has become a policy aim in France. Included in legislation, yet remaining controversial, it represents a major issue on which housing policies have been redesigned. The concept of social mix is mainly based on who lives where, but it is also raised in the context of urban renewal schemes for social housing estates, as well as in relation to new-build developments. Nowadays, projects of sustainable neighborhoods called "Eco-quartiers", driven by the State and local authorities, are implemented. Social mix and social cohesion represent mandatory components in the Eco-quartier framework. A study of the bases of social mix policies conducted in France through the Eco-quartier framework shows the fundamental role of social housing stock. In most eco-quartiers, the share of social housing is above 30 %. However, there are some doubts and contradictions between the objective of social mixing and others objectives. One of the goals of the eco-quartier framework is creating high quality of life neighborhoods thus creating spaces which are more attractive than the rest of the city. As a result, the implementation of eco-quartier may create segregation in the access to housing. The objective of green marketing is opposed to the aim of

social mix. That study will aim to investigate whether local authorities managed to establish social mix in a context of increasing attractiveness of the neighborhood, which cause gentrification.

Attitudes of elementary school students and teachers towards integrative teaching model

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Integrative teaching model is one of the innovative didactic models that connects content from two or several teaching subjects. Numerous programme content in the field of geography and biology in elementary school provide an excellent opportunity for applying integrated teaching model and an active type of learning for students.

The present study compares the attitudes of elementary school students and teachers (teachers of geography and biology), who applied integrative teaching model. For this purpose, the survey questionnaire has been constructed and distributed. By analyzing the results of the questionnaire, it was found that students' attitudes were correlated in the sense that a higher level of their grades from biology and geography correlates with more positive attitudes. A small number of elementary school students have already met with this teaching model. Vast majority of students, who had the opportunity to participate in such classes, expressed their positive attitudes towards them and wish to be included again in such activities. Also, they would like to learn the content of other subjects in this way. All teachers who applied this model showed positive attitudes towards him.

Further application of integrative teaching model is planned in other programme content as well as training of teachers for its application.

Hidden geography for epidemiologist: a case study from the Czech Republic

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Epidemiologists and public health experts are among those who use geographical competences naturally as part of their expertise. In the case of epidemiological surveys, however, working with the map and geographic data remains marginal, not one of the natural methods of working. The reasons are from the lack of experts with geographical competence to the lack of digital technologies such as GIS and navigation technologies. On the example of an epidemic situation of acute gastroenteritis (August 2015, Nový Bor, 12 thousand inhabitants), we will describe the opportunities for applying geographic thinking.

Within the epidemiological (using 10 WHO steps) and environmental surveys, there was a problem to formulate a questionnaire whose data could then be processed efficiently using geostatistical tools and displayed in geographic space. The reason for this was a time pressure typical of similar situations.

The acquired experience from the epidemiological survey was reflected in the long-term measures of the water supply system operator, communication settings and the procedure of investigation of poor drinking water. The aim of the research is to address the conditions of data collection during the epidemic with the support of digital technologies and mobile GIS, to propose standardized questionnaires, to propose appropriate methods of supporting the survey and the procedures for sharing conclusions that would be applicable throughout the Czech Republic.

The entropic governance of Rapa Nui, Chile

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Rapa Nui, a Polynesian island in middle of the Pacific Ocean, was ruled by Chile under a colonial regime until 1966, with unacknowledged political and citizen rights. Since recent emergence of formal local politics, there are three different organisations claiming for autonomy and/or independence, as well as for setting the agenda for local development. At the same time, Rapa Nui is ruled by at least five different Chilean administrative authorities located at different scales, all of them dealing with the complexities regarding a distant territory. Remoteness and clashes between Occidental/Chilean and Polynesian cultures intermingle in developmental discussions, from the distribution of economic revenues generated by tourism to claims for fulfilling local priorities, which are not always paired with national goals. By using semi-structured interviews and bibliographic review, governance system of Rapa Nui is assessed, aiming to understand how all these scales, authorities and logics interact. Although apparently chaotic, it is innovative in opening new structures to decentralise and to bring local claims to the national level. Even positions that openly confront the current dependence from the Chilean State have a role in modifying governance structures with results that are not yet replicated in other regions of the country. However, this successful entropic governance does not equate to a trouble-free or ideal system.

Comparative analysis of university selection motivational factors over the last 20 years

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In our research paper we examine the process of university selection. We are looking for the 3 most influential factors which determined the students' decision when choosing their higher education institution. For our research we used the 2 largest scientific publication databases: the Scopus and the Web of Science database. We've sorted the scientific publications by three parameters:

- relevant results: for "university choice" and "university selection" keywords
- time compliance: a 20-year period was examined, divided to two separate periods: from 1999 to 2008 and from 2009 to 2018
- citation frequency: we arranged the results in a descending order

For both databases, we analysed the first 30 results for both time periods. This means a total of 120 international publications. We also filtered duplicate papers. These publications have used a wide variety of methods for data acquisition:

- large sample surveys
- in-depth interviews
- researches on a specific university
- global surveys

After the analysis of these international researches, we discovered many similarities between the results regardless of the location and time of the research: one of the most prominent aspects was the geographical distance between the students' home and the university. Finally, the comparative analysis of the changes during the 2 examined periods was carried out.

By presenting the detailed results of this analysis we hope to get guidance in the direction of our further research.

Integrating Biodiversity into Geodiversity Evaluation Methodology

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The concept of geodiversity has been gaining on its importance in the last 15 years. It developed analogically to the concept of biodiversity, which had gained its importance much earlier. Despite the similarities in the core concept, neither the structure nor the methods of valuing geodiversity have not developed analogically to the ones from biodiversity. If biodiversity, which deals with valuing and preserving biotic environment, has a clear hierarchical structure and methods of evaluating it on each level, geodiversity lacks this conceptual hierarchy of its elements as well as methodology for evaluation on each level. Hence, the presentation defines the structure of geodiversity and establishes a concept of its evaluation in the most comparable level to the one of biodiversity. Later, it applies the new methodology to a study area in the foothills of the Slovenian Alps, and lastly compares the evaluation results to the ones of the already established methods.

Everyday routes

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The majority of people use in their daily routine the same routes, e.g., from home to work or from home to school. Subconsciously, they are affected by the routes' characteristics and are left with different impressions. In our research, we wanted to find out what primary school pupils and students, training to be class teachers, would point out as interesting features of their daily routes from home to school. What are their "personal geographical perceptions" of their everyday routes? The pupils and the students photographed and briefly described between three and twenty interesting features along their routes from home to school/faculty, regardless of the distance covered. We counted the average number of photographs and determined what features they predominantly included. We tried to ascertain whether their written descriptions of the photographs reflected the features that also others saw as dominant in the photographs. As a research method, a quantitative approach case study was used. Results have shown that human-made features were chosen far more often than natural landscape elements of their everyday routes. In their descriptions, they mostly listed the photographed features; uncleaned surroundings, people and their feelings were included in their descriptions merely as an exception.

Hidden Geographies Of Population Implosion In Bosnia And Herzegovina

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In Bosnia and Herzegovina, there has been a continuous depopulation since 1991, and it was foreseen even without the emergence of war, but not nearly in that extent or that early. A large number of young educated people moved out of Bosnia and Herzegovina during the same period, and there was a continuous process of selective population loss.

Bosnia and Herzegovina is in a worse demographic position than the European Union countries that show similar demographic trends. Very low birth rates, fertility and natural growth have been achieved under conditions of weaker economic development, which increasingly accelerates emigration of the vital educated population in particular and permanently adversely affects the reproductive potential of the country.

This paper considers a hidden mutual relationship between the demographic situation in Bosnia and Herzegovina and the system of values of the citizens of Bosnia and Herzegovina in which, according to the conducted research, Bosnia and Herzegovina citizens have a smaller number of children than they would like. The aim of the paper is also to find out whether the diversity of national and religious pervasion of areas in Bosnia and Herzegovina has a hidden impact on the process of population implosion.

The Slovene Model for Place-Based Mountain Education

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Educators in Slovenia have developed a unique approach to environmental education that instills mountain geography and culture in the nation's students via experiential methods. This approach appears successful yet remains understudied. I propose to use qualitative methods to investigate the concepts, processes, and experiences that define this Slovenian approach to education to draw out lessons that are relevant and applicable to learning situations in mountainous settings in the US and abroad.

Geography and tourism - cause or consequence?

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Tourism has become an important economy sector, which is significantly influenced by natural and socio-geographical factors. Therefore, it is crucial for future development to know and understand them, as well as link, explain and evaluate them. Partial interpretation and explanation of economic contents needs a counterweight in the sense of interpretation of the same phenomenon from the geographical point of view. Linking economical, sociological, environmental and geographical contents presents a challenge for teachers. With different learning approaches we can evaluate and assess the causes and consequences of the teaching contents. The article presents concept maps, case studies and experimental learning, which are examples of different learning approaches to teaching »hidden geography« in the subject of tourism.

Senses of places as influential hidden geographies: topophilia and topophobia in neighbourhoods of Ljubljana

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Senses of places are constructs influenced by a wide and complex set of factors, from real-life personal experiences to stereotypes based on (mis)information from media. Personal or aggregated geographies of senses of places are therefore essentially hidden to others, and not easy to be studied and portrayed. A series of studies of topophilia and topophobia of neighbourhoods of Ljubljana, carried out since 2001 until 2018, provides an insight into the spatial patterns and interpretations of specific senses of places in Ljubljana. Their relations with places where individuals would or would not reside, and places they fear to visit, make such senses very influential. And vice versa, respondents' explanations of their expressions of topophilia or topophobia reveal several possibilities for deliberate, even planned influences on such hidden geographies.

Hidden geographical contexts of a visible post-war landscape: a case study in Bosnia and Herzegovina

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Imagine a visitor, for example from Western Europe, who decided to go to Central Dalmatia taking an "alternative route", approximately parallel to the main tourist highway, via Bihac, Una National Park, Drvar, Livanjsko Polje, towards Makarska. On the road through the karst landscape of silent natural beauty, as he approaches Livanjsko polje, the visitor sees the contrasts in the socio-geographical characteristics of the landscape which he can hardly explain on the basis of his experiences from his homeland, or deduced from his general geographic knowledge. Only short distances apart abandoned buildings or abandoned villages are followed by lively settlements with renovated houses and children playing in the yards, or by villages with only few buildings showing signs of permanent population. These settlements, at least at first glance, share similar geographical circumstances and developmental opportunities. Basic knowledge of the (close) history of these areas suggests that what the above-mentioned visitor sees might be interpreted as a consequence of the war of the 1990s. But a lot questions remain unanswered, like: whose buildings have been demolished? where are former residents now? who now lives in the reconstructed settlements? is the context of what he sees only a consequence of the hidden geography of ethnic structure of the 1990s, or even from earlier times?

Not even a detailed study of available information could fully answer such questions - and that is not our goal either. We use diverse sources, from statistical data, maps, to personal stories, even ethnically biased interpretations, to demonstrate the forces and multidimensional effects of "objective" or "subjective" hidden geographies in the selected areas between Bosansko Grahovo and Livno, and how even partial disclosure of such geographies helps in understanding the observed landscape.

Awe, Wonder and Pure Power: using powerful geography to release hidden physical geography.

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The physical world is full of awe-inspiring examples that can engender sensory and emotional responses, sometimes referred to as a 'wow' factor. These can be useful as starting points for teaching but for a deeper learning experience both teachers and students need to probe beyond the 'obvious' and release the 'hidden' physical geography. The hidden lies in the abstract and conceptual ideas that emerge from a broader established system of disciplinary thought, which has been termed powerful disciplinary knowledge. Powerful knowledge exists outside the everyday or direct experience of the teacher and the learner and may be counter-intuitive at times, especially in the face of awe and wonder experiences.

Enabling students to make sense of physical geography through the lens of powerful knowledge provides the intellectual power for students to develop new ways of seeing and to place aspects of the physical world in proper context. To reveal hidden physical geography teachers need to engage with deep thinking about the subject and what this means in terms of powerful knowledge. In turn, this enables teachers to prioritise and underpin how they shape the curriculum and their classroom teaching, and to devise teaching approaches that can engage students to reveal and encourage exploration of what would otherwise remain hidden or mysterious to the student.

How to make the hidden geographies visible in the classroom

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Geography is one of the school subjects in which children and young people's own experiences and views on the world can be easily taken into account (Tani, 2011). In recent years the interest for personal and everyday geographies of children and students has grown. But do teachers in the Netherlands already use their student personal geographical experiences in class and how do (or can) they do that? This presentation will give a theoretical exploration about the ideas and concepts connected to personal geographies and discuss a research proposal for a practical research in the Netherlands.

Pre-Service Geography Teacher Education in Slovenia - Vision Versus Reality

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For several decades, there have been many attempts to define and refine the role of a geography teacher. While many improvements of geography education can begin at the pre-service teacher education level, there is a need for symbiosis between theory and practice and further development in the education of pre-service teachers. In the majority of subject didactics, the traditional scientific approach has given way to the reflexive approach, in which experiential learning and research work (in any environment where teaching and learning take place) prevail. Theory and practice therefore help to form the individual's way of thinking and influence their decisions.

For many years the pre-service geography teacher education in Slovenia has been pushed forward by the educators' profound belief in the significance of preparing students for their future profession regardless of many obstacles such as school legislation, experience in geography classrooms, mentoring etc., but there remain many open questions and problems that need to be tackled.

Boundary stones and their "hidden" legacy in Slovenia

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A boundary stone, boundary marker, border marker, or border stone is a robust physical marker that identifies a land boundary, especially a change in direction of a boundary. Usually it represents a stone. Natural stone was used for the boundary stones, and later they were made of concrete or other materials. Usually, they were placed in a particularly visible place. Many are equipped with selected information, such as the abbreviation of the holder of the border and the date. On the boundary stones that separate countries, there are usually abbreviations for the countries that they are separating, as well as the date of border determination. In Slovenia, we find boundary stone as far back as the Roman times. In the paper we will focus on the boundary stones on the territory of present-day Slovenia that divided the dualist Habsburg Monarchy into two entities, to the boundary stones that divided the Kingdom of Italy and Yugoslavia between the first and second world wars, and the boundary stones dividing the occupation during the Second World War (by Germany, Italy, Hungary and Croatia). Presented boundary stones no longer serve the original purpose, but where they stand, they are historical "witnesses" as "markers" of the past. Today, old boundary stones are

also interesting from the aspect of cultural heritage – intangible in terms of the tradition of regulating rights in space and tangible as an archaeological remnant.

Visualization of two aspects of residential preference and its change in Japan

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Visualization of the subjective evaluation of regional environment began in human geography as a study of mental maps in the 1960s. Studies on the mental map in terms of residential desirability have commonly observed that the perception surface of space preference can be decomposed into two elements, viz., the general surface shared by all groups of respondents and a local dome representing feelings people have for a familiar area. These two elements are essentially different in nature: the general surface is derived from an evaluation of places other than the familiar area; a local dome represents people's satisfaction with their home area. In addition, since few studies have examined the change in space preference, the stability of space preference is unknown. This study aims to analyze data collected by separating the two aspects of space preference and examine variability of space preference by employing data collected by the same method in different time. Data used in this research are derived from an attitude survey on the character of the people by prefecture conducted by Nippon Hoso Kyokai in 1978 and 1996. An analysis of the answers to questions on residential desirability of prefectures other than the present residence and answers regarding home area satisfaction did not demonstrate a significant correlation. A comparison of the residential preference between 1978 and 1996 revealed that there are stable and variable components of residential desirability.

Geocapabilities 3: An Approach To Social Justice In Geography Teaching Through Powerful Knowledge

Karl Donert, Luc Zwartjes

EUROGEO & University Of Ghent

The GeoCapabilities approach has been based on research to develop a 'Capabilities' approach to improve geography teacher preparation and in-service training in geographical education. It provides an approach to articulate the wider educational benefits of a strong geographical education presence.

'Capabilities' is rooted in a conceptual framework for education drawing on the ideas of economist Amartya Sen and philosopher Martha Nussbaum in the field of human welfare and development economics. The capabilities approach asks teachers, curriculum makers and education policymakers to reflect on the role of education in affording people with intellectual, moral, and existential capabilities for lifelong learning, economic and social agency in citizenship, and the pursuit of personal well-being. Educational capabilities are central to maintaining a purposeful and informed focus on learning and teaching through the development of powerful knowledge.

GeoCapabilities seeks to identify shared concepts, content and performance standards that go beyond a focus on competencies (and especially those that emphasise technical transferable skills) and on to capabilities that illustrate how geography contributes in specific ways (and no matter how it is configured in national standards) to young people's deep descriptive 'world knowledge', based on a theoretically-informed relational understanding of people and places in the world; and a propensity and disposition to think about alternative social, economic and environmental futures. This requires teachers, through curriculum making, to become leaders to give young people opportunities to acquire, develop and apply a range of key ideas and principles, and ultimately to make judgments about particular issues or themes through thinking geographically.

This presentation reports on the third phase of GeoCapabilities by exploring the meaning of social justice in the geography classrooms through teaching about migration thereby analysing and

comparing the content, organisation, and situation of geography. It will focus on the research findings of teachers and educators and their perceptions of what ought to be taught in secondary school classrooms about migration.

L-cloud: Developing Tomorrow's Cloud Education Leaders

Karl Donert, Harry Rogge
EUROGEO

L-Cloud is an Erasmus+ Key Action 2 project in the field of Strategic Partnerships for school education. It is based on the huge potential and advantages of Cloud-based System adoption in education. The project responds to this by seeking to establish training and support systems to help leaders in education, such as head teachers and policy makers, keep up to date with the rapidly changing environment and promote active personalised learning in and beyond schools. Such leadership is needed to encourage and enable pedagogical change, otherwise educators will continue the paradox of using new technological tools with old teaching methods.

L-Cloud is based on the results of the School on the Cloud Project - connecting education to the Cloud for digital citizenship, which explored how education should respond to Cloud Computing developments and how Cloud-based services can be used to improve the quality of education and transform the way schools are led and managed.

The presentation will introduce how L-Cloud is designed to promote leadership for change and result in the following main outputs:

- Guidelines for Skills and Competences for Adaptive Education Cloud Leaders
- A Qualification Framework for Education Cloud Leaders based on Skills and Competence.
- A course for developing adaptive education cloud leaders

Poster presentations - *Predstavivte s plakati*

The Role Of Spatial Demography In Visualization Of Population Phenomena And Processes

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The aim of this paper is to point out the role and advantages of spatial demography in the visualization of population trends and the interpretation of hidden contents. Spatial demography evolves as a new method or discipline within the framework of population sciences and represents a symbiosis of knowledge in the field of demography, geography and statistics. The application of methods and techniques of spatial analysis, such as spatial autocorrelation, spatial econometrics, hierarchical modeling, geographically weighted regression and the point patterns analysis, allows us to explore demographic phenomena and processes from a new perspective. The application of listed methods in spatial demography culminates with the development of geographic information systems, which allows not only the collection, storage and manipulation of large datasets but also the visualization of results. Detecting the models of demographic phenomena spatial manifestation and their adequate cartographic visualization, enables a better understanding of demographic processes, as well as their cause-and-effect relationships. Regularities in these relationships, are of great importance for the prediction of future demographic trends and provides necessary information for the designing and evaluation of population and other public policies.

Hidden city: The footprint of illegal urban planning in Spain

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The spread of the urban effect, as well as the sprawl processes that it generally involves, has been a recurring theme in the growth of most Spanish cities over the last few decades. These phenomena have been studied extensively from the standpoint of different disciplines, though this has generally been carried out without a detailed analysis of the origins of the dispersed urban settlements that have been colonising land beyond the boundaries of the planned city.

It is the latter aspect, the planned or unplanned origin of new urban developments, that can be turned into a key element that serves to target the different urban sprawl processes that have characterised the growth of cities in the last few decades. This is the case of those where the expansion of the city that has been developed outside of urban planning, which has come to be known as the hidden city, is of such magnitude that it holds greater importance than the planned city itself.

The main aim of this paper is to describe and analyse the problem of the illegal urban subdivisions and developments that have been carried out in Spain since the 1960s and 1970s. This will be carried out taking into account that it is a unique case of urban sprawl and suburbanization processes that have characterised the growth of cities during that period. Secondly, we will show the effects of this illegal urban growth on the territorial structures of one of the most affected communities in relation to this phenomenon.

Interdisciplinary excursion - motivation and upgrade of knowledge

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Here, at Primary School Vrhovci, we have been working on the EU project for seven consecutive years. The purpose of this project is to familiarize the ninth-grade pupils with the EU as their extended homeland. We want to raise the awareness and make our youth become active members of the society. By using creative teaching methods, our goal is to strengthen, expand, and apply knowledge gained in different school subjects, especially those pertaining the EU. The pupils are actively involved in the process of the project. Both mentors are striving to be there for them merely as someone who guides and advises them.

One of the key methods is the excursion. Within the framework of the project, there is an annual excursion to one of the two centers of the EU politics, Brussels or Strasbourg, or some other EU metropolises. The excursions are interdisciplinary based, with pupils taking part in all the development phases. Apart from the educational role of this project, there is also the more crucial, upbringing role. Pupils who live in large European cities are faced with multiculturalism, they internalize EU slogan "United in diversity" and become aware that people of different cultures, languages and traditions represent true wealth that brings internal peace and welfare to Europe. At the time of growth of the nationalist movements in EU members, this is the only guarantee that these very children will fight to preserve the idea of the united Europe.

Concealed Particulate Matter Pollution in Hilly Rural Areas

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The aim of our study is to explore particulate matter pollution in the hilly rural areas, example of which is the model region Loški Potok, Slovenia. Measurements of airborne particles were performed in the model region Retje (Slovenia), a woody karst hollow with frequent ground temperature inversions and residential wood combustion as the main energy source. To determine the spatiotemporal variability of the equivalent black carbon (eBC) concentrations in the selected hilly, rural area stationary (instruments: AE-33, TROPOS and TSI MPSS) and mobile measurements (instruments: AE51, MA200, OPSS 3330, temperature sensor) (Alas et al., 2018) were performed in winter 2017/18.

The highest eBC concentrations were in the evenings, during temperature inversions (the median eBC for the whole hollow was 6.9 $\mu\text{g}/\text{m}^3$). In the village Retje the median of eBC concentrations was much higher (14–20 $\mu\text{g}/\text{m}^3$) than on the top of the hill Tabor (2–5 $\mu\text{g}/\text{m}^3$), where the air starts to drain out of the hollow. The pollutant concentrations in the studied area vary significantly in time and space due to human activities (residential wood burning) and the shallow thickness of an inversion layer causing a fast rise of concentrations levels, when the emission sources are active, followed by rapid concentrations decline with fast inversion layer break up.

Water availability changes during the 2010-2015 mega-drought in the Petorca basin: Response of agriculture, native vegetation and water access in one of the most drought affected basin of Chile

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The Petorca Basin (PB) is one of the most affected areas by water scarcity in Chile. Located in the transition of the Semi-arid and Mediterranean climate of central Chile, it is one of the few basins without glacier water input. During the past 10 years an increase in agriculture and irrigation has produced a water crisis, drying parts of the main river and creating a social conflict for water availability. The 2010–2015 mega-drought experienced in Chile, has been considered one of the most dramatic droughts of the last centuries, impacting water storage, agriculture and human water use. Recently, large scale analyses of this mega-drought period have been developed, but a detailed analysis has not been yet conducted in the basins considered most vulnerable to water scarcity in Chile. Using a combination of tree-ring records, instrumental and remote sensing data, we analyse the changes in water resources and also the response of the agriculture and native vegetation in different areas of the PB. Our results suggest that water resources in the mid and low sections of the basin were more affected by the mega-drought than the high elevation ones. The same response was found in the vigour of the agriculture. Additionally, native vegetation was observed to be less affected by the drought than agricultural crops, suggesting a high drought adaptation of the native species. Finally, the analysis of a one thousand years' streamflow reconstruction from tree-ring records, revealed that the five years of the mega-drought have been the most severe dry period of the last millennia. We conclude that even though the 2010–2015 mega-drought was the worst climate

extreme period ever recorded, water management is in most cases the first responsible of water scarcity in the PB.

Perspective on the food insecurity and obesity paradox: Is there spatial mismatch of healthy food access and low-income households?

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Food insecurity is defined as the lack of adequate food to live a healthy life, and contributes to chronic disease and hunger. In developed countries, food insecurity is also associated to increased rates of obesity. The food insecurity-obesity paradox accounts for the poor-quality diet (i.e. high calories) due to limited financial resources. Over 12% of American households experience episodes of food insecurity at some time during the year. This study applies the spatial mismatch hypothesis, which has been used to examine employment and housing market segregation, in examining the spatial relationship of healthy and unhealthy food retailers to low-income neighborhoods in the USA. Fresh fruits and vegetables are often more expensive in low-income neighborhoods and foods offered in convenience stores can be up to 100% more costly than traditional food retailers. This suggests an inequity in the availability of healthy, affordable foods. While there is evidence of food deserts, or the absence of supermarkets, in low-resource neighborhoods, it is not known if there are spatial disparities by food retail type in urban and rural areas. This study will apply GIS technology to spatially analyze the relationship of food retailer types and neighborhood demographic characteristics. Results from this study can inform decision-makers in guiding urban planners and public health practitioners in addressing equitable and affordable healthy food availability in low-resource communities.

Towards cleaner routes for cyclists and pedestrians

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Cyclists and pedestrians often commute in polluted air without being aware of it. Due to their physical effort during travel, they often inhale more air pollution than other transport modes. The poster highlights a number of spatio-temporal characteristics of air pollution cyclists and pedestrians are exposed to. A number of case-studies are visually represented to highlight those spatio-temporal patterns. Concentrations of black carbon and Nitrogen dioxide are significantly higher on roads with intensive road traffic compared to roads with less traffic and cycling highways. The amplitude depends on both temporal (season, day of the week, time of the day), and spatial context factors such as density of motorized traffic, the geographic location of the footpath or cycle lane, and the meteorological conditions. In general, cyclists and pedestrians are recommended to avoid city-rings and car-busy street-canyons because air pollution is in general the worst on those type of roads (in the European context).

Digital resources in High School soil education

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The teaching basics of the soil science on High School level is essential because the students learn not only about soil properties but also about conscious and rational using of the earth resources. Globalization raises the need to correlate resources, methods of describing and classifying available in different countries and unify their use and application in the aspect of soil science at various levels of education. Aim of this study is to present different possibilities of using digital teaching resources for the purposes of soil education. There are many tools freely accessible throughout European Union and whole world as well. The suitable examples of these tools are a handbook of the soil profile description for educational purposes, a web database with soil charts and 3D panoramas of landscapes, soil atlases elaborated during Erasmus+ FACES educational project: www.soils.umk.pl. "Digital natives" – modern students – are more and more demanding in the context of up-to-date educational resources. The use of digital, interactive and responsive materials in the soil education can contribute to increasing the educational effectiveness. Presented tools give the possibility of quick use up-to-date information that allow to describe the distribution of soil resources. These can be introduced during the lessons of geography on High School level and help teachers and students to observe and describe the soil profile in the same way as in the other countries.

The application of remote sensing and soil-agricultural maps on soil erosion modelling

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The soil cover of Northern Poland is characterized by a significant degree of denudation and anthropic degradation. This affects many basic soil properties: organic matter content, texture, soil profile thickness, etc. The aim of this research was to use existing cartographic materials and satellite imagery to assess the extent and intensity of soil water erosion using RUSLE model. To assess the water soil erosion applying RUSLE model, we use following input data: the DTM with a resolution of 100 m, soil-agricultural maps in scale 1:25000, soil map of Poland in scale 1:300000, Sentinel-1 and Sentinel-2 imagery. Using ArcGIS 10.5, SAGA GIS, ERDAS IMAGINE, and QGIS 3.4 software, a digital actual soil erosion map of the Noteć River catchment was developed. The obtained results indicated the relatively high threat of water erosion. Classes of actual strong erosion (3-5) covered almost 10% of the entire study area. The most endangered by soil water erosion are the areas with high denivelations: denudation valleys located perpendicularly to Toruń-Eberswalde ice-marginal valley. The results show that both satellite imagery and soil-agricultural maps are a useful source to assess water soil erosion. Moreover, it was shown that the RUSLE model can be a valuable tool for the identification of colluvial soils locations.

Assessment the efficiency of new designed spectral indices in extraction of main land covers from satellite imageries

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Spectral indices are one of the most important digital image processing techniques used for extraction and identification of land cover from remote sensing data. Index design for any type of land cover requires well knowledge and understanding of the spectral response curve of that land cover type compared to spectral curves of other land cover types. Several indices for main land cover are published in literature but it turned out some of them are inaccurate in discrimination of the required land cover. The current study aims to design new indices for built-up, vegetation cover, water bodies and bare land and compare their results with that come from other available indices. Many satellite imageries i.e., Landsat 7, Landsat 8 and Sentinel 2 data at different geographic location are used in testing the efficiency of new indices. Accuracy assessment methods are applied to show the discrimination possibility of boundary pixels of classes with approximately similar in their spectral

signature curves. The results indicate the superior of newly designed indices over the other available indices and by adding them to original bands of satellite images will enhance the digital classification results.

Use of GIS methods for air quality assessment in case of lack of data obtained by mobile systems – case study, Česká Lípa, North Bohemia

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The case study describes the analytical processing of air quality data measured by mobile stations in the middle-size settlement (40 thousand inhabitants) in the basin to hilly relief. The task was burdened by a small number of mobile measuring stations, which by their deployment covered only part of the area of interest. The partial output of the GIS processing were interpolated surfaces and their combination with spatial and temporal distribution of the city's inhabitants. The aim of the air quality assessment study was to estimate the impact of transport, local heating and industrial sources. Another goal was to identify the impact of a problem resource or city area. The study carried out a 24-hour screening of air quality measurements at five measuring points using mobile systems combined with stationary data. Urban areas were categorized into 7 categories of urban locations. For categorization were used: expert and field findings, interpretation of actual orthophoto and utilization of traffic census data. By processing the data in the GIS it was possible to extend the point data on air quality to the spatial whole solved area and to obtain estimates of values about unmeasured localities of the city. This method of air measurement and subsequent evaluation of the area is proving to be an effective method of spatial analysis of air monitoring data by a stationary station with direct map outputs for spatial planning.

Analysis of the problems of settlements based on the case method and its use by geography teachers

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Any point on a map is unique for geographical analysis: a special combination of natural-resource, economic, social, cultural, historical, political, ecological conditions is formed here. The solution of local problems and the development of each locality involve a comprehensive analysis of the real situation and opinions of residents, representatives of the media, government and business. Situational analysis of local and other data shows the practical importance of geography for students, especially using the case method in the classroom. The purpose of this research was to study the readiness of geography teachers to use the case method to analyze the problems and ways of development of their locality and any other point on the world map. The study was conducted in 10 regions of the Russian Federation and 3 regions of Ukraine. In total, 520 geography teachers from the two countries took part in it. The study showed the difficulty of teachers in using the case method to analyze local situations in geography lessons. According to the results of the study, a special program and workshops for teachers were prepared. It was widely tested and showed its high efficiency. The results of the study and examples of practical exercises may be interesting for the participants of this conference, especially for geography teachers.

Women's housing problems in Japan: Regional disparities in poverty levels of women and children

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Women's housing problems are often described with regard to economic disparities, which are differences in housing acquisition ability and rent payment ability resulting from income differences between men and women. Such disparity affects the choices of residential location and housing. However, women must also deal with the following problems from regional characteristics: the residential environment and the possibility of children entering nursery school, employment opportunities, and/or security conditions. The aim of this paper is to clarify urban spaces in terms of gender filters while pinpointing various housing problems that women face. Women's housing problems in Japan are closely related to women's economic problems and are also greatly influenced by Japanese customs. In particular, due to the increase in divorce rates today, the number of single mother's households in need of housing is increasing. In Western countries, fathers often leave homes after divorce, while in Japan, mothers and children often leave their homes after divorce. In addition to the need to search for jobs and find housing, most available jobs are often low-paying, unstable, and non-regular. Moreover, considering the burden of childcare, child schooling, or housework and childcare, home and work should be close by. This kind of restricted choice of housing inevitably leads divorced women with their children to specific areas with low rent and easy access to part-time jobs.

Potential for the Development of Astronomical Tourism in a Peripheral Region in Japan: A Case Study of Kumano City, Mie Prefecture

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This study discusses the potential for the development of astronomical tourism in Kumano City. The Mie University has been working on 'promoting stargazing activities for tourism development in cooperation with the local government and the local tourism association since 2018. The astronomy laboratory has clarified that Kumano City has a much better environment to enjoy stargazing than other parts of Mie Prefecture and some other regions. In addition, this study administered a web questionnaire to 200 tourists who have visited Kumano City since 2014 to analyse the tourist behaviours and their interests and concerns in relation to stargazing activities. The results indicated that most tourists might prefer to visit some notable tourist attractions related to the World Heritage or National Park as well as those sites that can be easily accessed by car than engage in stargazing. Regarding astronomical tourism, almost all the tourists were interested in leisurely stargazing activities but there were few opportunities to do so because they tended to do nothing and relax after dinner at their accommodations. Thus, for promoting astronomical tourism, it is necessary to not only improve human resource development such as providing interpreters for stargazing but also to create some spaces and environments where it is possible to have a great time watching the sky at night as well as to engage in academic activities in Kumano City.

Retrospective Mapping and Spatial Analysis of the Road Network and Import-Export of Goods in 16th Century Samtskhe-Javakheti

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The aim of the presented research was to study road network, import, export and trade goods in 16th century Samtskhe-Javakheti (Georgia). The main source of the research was the historical document, which is known as "The Great Book of the Gurjistan Vilayet". It is a census document created in 1573 by Ottoman Empire officials with the purpose to collect taxes from occupied settlements. The document is rich with information and covers many aspects of the environment and society of that time. The research was conducted under the project, Retrospective Mapping and Spatial Analysis of

the Samtskhe-Javakheti Region Based on "The Great Book of the Gurjistan Vilayet" between 2016 and 2018 years. We organized several field trips to the study area and created Retrospective Thematic Geoinformation System. The study also included a literature review, which helped us to revive data, collected and sorted into the GIS databases. In the study period the road network was of a different nature from that of today. There were three major categories of roads: local, regional and international. We identified these categories using GIS and calculated the length and density of the roads. We also created the database of local goods, that had been traded at that time.

Education in Sustainable Development Goals using ArcGIS Online WebGIS

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On 2015 the UN takes the initiative in formulating 17 Sustainable Development Goals (SDGs) with the aim of achieving them in fifteen years (2030 Agenda). The SDGs seek a multidimensional model of development that would guarantee sustainability. Education in Sustainable Development Goals (SDGs) should be an important task in training teachers (Quiroz-Niño & Murga-Menoyo, 2017; Murga-Menoyo, Correia & Espinosa, 2018). This aim will be done by using WebGIS technology. It is possible to raise awareness of the SDGs in all their dimensions (environmental or ecological, economic and social development, as well as adequate governance) (Álvarez & Lázaro, 2018) designing a WebGIS. The learning will be reinforced and it is integrated with a novel educational trend whose success in university lectures is justified by numerous authors (Kim et al 2013, Lázaro et al, 2014; Lázaro, Izquierdo and González, 2016; Lázaro, De Miguel and González, 2018, Fargher, 2018).

The use of cartographic language in a WebGIS to express the objectives of sustainable development and linking education on SDGs means to aware on:

- a) technology (using the ArcGIS Online WebGIS)
- b) content (SDGs and Spatial critical thinking)
- c) pedagogy, as we propose to achieve this education under adequate pedagogy and methodology.

Building on these three pillars, it is possible to follow the TPACK model (Mishra and Koehler, 2006) in designing teaching activities.

GI Learner: a learning line on geospatial thinking in secondary education

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GI Learner was a three years 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.

Thus the project first point is a clear definition and explanation of learning lines after a deep literature review (Donert et al, 2016). A learning line is defined as an educational term for the construction of knowledge and skills throughout the whole curriculum. It should reflect a growing level of complexity, ranging from easy (more basic skills and knowledge) to difficult (Lindner-Fally & Zwartjes, 2012). On results of these, a competencies model or learning outcomes for GI-Learning has been done on these learning lines using lessons plans on different topics.

At the beginning and at the end of the three years period, a self-evaluation online test has given the impact of the learning line approach showing the improvement on the GIScience skills and competencies of the students.

Some actions will be needed in the future to implement GIScience on secondary lessons, such as improve teachers training abilities and skills on this direction and aware on a new approach to the curriculum using GIScience on learning and teaching aims (Lázaro, De Miguel and Buzo, 2018).

Representation of Slovenian filming locations in narratives of foreign-produced movies

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During Yugoslav period Slovenia was an attractive destination for western film makers who recognized diverse and pristine nature and preserved cultural heritage as suitable scenes for their movies. Important factors for filming were low cost coproduction agreements with Yugoslavian market-oriented film companies, low production prices and freer political atmosphere compared to the Soviet bloc countries. Their interest disappeared after the dissolution of Yugoslavia and political instability of the region. Slovenia as an attractive film destination was “rediscovered” only recently by Indian filmmakers and American, German and Italian companies who found advantage in recently introduced tax rebate policy. I analysed foreign produced movies filmed in Slovenia since 1950s to determine the meaning of selected locations in the narratives. Film locations in the movie narratives mostly substitute other locations in other countries or regions. The second most frequent motive is a fantasy scene or not explicitly defined location. Understanding references of Slovenian filming locations in movie narratives can be useful for location scouts and tourism workers who design promotion strategies.

Project European Union

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The research project European Union shows us a successful solution to the answer, an example of good practice of how to familiarize pupils with the EU, its institutions and encourage their belonging to the EU. The research integrates: upgrading their EU knowledge via innovative educational methods (quizzes, team research work, debates, visiting the EU House and the Slovene Parliament, a visitation of a EU representative), presentation of PPT regarding a specific topic, presenting the topic to fellow pupils, peer learning using the methods of active participation of the first triade pupils (preparing typical dishes of the EU members, organizing sport events, colouring the EU symbols), final selection of teaching materials and the making of didactic material for the purpose of teaching about the EU. The target group are the ninth-grade pupils, showing interest and talent in social studies and those who are willing to invest their energy into in-depth studies concerning the EU. Co-mentor and I have only taken on the roles of catalysts and motivators. The pupils are eager to take on any tasks concerning the project, they feel liberated accepting new knowledge and sharing the information with their peers. They have no problems with public speaking. There is a feeling of mutual understanding in the group. By using innovative methods and creative forms of work the pupils' motivation as well as the knowledge quality increases.

Attitudes of pre-service teachers towards environmental education and education for sustainable development

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Environmental problems have become a global issue and education is one of the key factors in developing public knowledge and awareness about these issues. It is important that teachers at all school levels fully understand their role in educating their students to be environmentally knowledgeable, have positive attitudes towards the environment and show concern for environmental problems and sustainable development.

The main aim of this paper is to introduce PhD research project, exploring the attitudes of pre-service teachers to environmental education, sustainable development and environment to find the best way how to incorporate the ESD (Education for Sustainable Development) to school curriculum and the future lectures of pre-service teachers. This statement also raise other questions: Does environmental attitude of these students affect their attitude to environmental education? Does their environmental knowledge and awareness have any influence as well? What is hidden behind the students' environmental hope and concern? Does it correlate with their final attitude? And does it all have an effect on their self-efficacy and the resolution to incorporate environmental education to their future lectures? These questions will also be discussed.

Europe: What do You Know? What Can You Tell?

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This poster presentation of two maps on Europe will challenge any viewer to share his or her knowledge on the content that those maps represent. Raising awareness of our responsibility what we should know and what we could share. With "fellow-Europeans", with foreigners from beyond Europe and if we are in a teaching position: "what do students need to know!". Questions/content to deal with: What is Europe? What Europe are we talking about? Who is a European? And when are you a European? How and where does Europe function? What institutions define Europe? Reason for this topic and poster is the current rise of Euro-scepticism and the lack of knowledge of the fact why Europe is so important for us all!

Comparative statistical analysis of the water quality of the Sava River through Slovenia and Serbia

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Sava River is the second longest tributary of the Danube. Like many other rivers in developing countries, Sava River is polluted mostly due to release of industrial and sewer system waste water directly in water ecosystems. This paper aims to assess water quality of Sava River in a part of the streamflow through Slovenia and Serbia. The research period covered twenty years (1997-2016), for three control points in Slovenia (Otoče, Medno and Jesenice na Dolenjskem) and three control points in Serbia (Jamena, Šabac and Ostružnica). In this study, the water quality status and the spatial and temporal trends were assessed based on ten physical and chemical parameters. Results were obtained on the basis of one-way analysis of variance ANOVA and t-test for independent samples. Results showed significant statistical differences between all observed control points. Good water quality was registered at control point Otoče. On this control point were registered lowest values of temperature, conductivity, biological oxygen demand, suspended solids, nitrates, nitrites, orthophosphates and ammonium as well as the highest values of pH and dissolved oxygen. Poor water quality was registered at control point Jamena. The results show a statistically significant

differences between the most quality parameters between streamflow in Slovenia and Serbia. Finally, better water quality is registered in the Slovenian part of the Sava river.

Pre-service Geography Teachers Conceptions of Geography: Validation of a Questionnaire

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Pre-service teachers are seen as key players in building the image of school geography in the near future. The focus of the inquiry is to identify existing (prevailing) conceptions of geography education of Czech pre-service teachers. The study was built Castling's (2004) classification of geography conceptions which defines the following (prevailing) conceptions: Globalist, Earthist, Interactionist, Placeist, Localist, Environmentalist, Synthesiser, and Facilitator. We elaborated the classification in 49 questionnaire items in order to validate a theoretical model. The sample of the survey consisted of 183 Czech secondary geography pre-service teachers recruited from all higher education institutions preparing geography teachers in Czechia. The model was analysed by structural equation modelling, item analysis and cluster analysis. As it is the first adaptation of the model, we pay attention to difficulties brought by the empirical validation of the questionnaire. The findings suggest that, among all conceptions, Czech pre-service geography teachers tend to Interactionist and Localist conception mainly. The findings will be discussed with the research results from our previous qualitative study.

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Exploring how community participation affects the sense of community from the actions of community care: A Case Study of Wennei Community, Taiwan

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Many studies have shown that cohesion in the sense of community is the key element to community building. The care services the community provides is the primary means of promoting the sense of community. Previous studies have focused on the functional aspects of actions in care services, and lack an analysis of how the extent and manner of residents' participation in community care services affect their sense of community.

This study adopts the field experiment method and uses the "Neighborhood Cohesion Instrument" to measure the change of the sense of community from 77 residents before and after participating in the project of care services in Wennei community in Taiwan. Also, further use the method of participant observation and in-depth interviews to conduct a qualitative analysis.

The results show that (1) Residents' participation in the actions of community care services will enhance their sense of community. (2) The frequency of active participation of residents in the actions of community care services is the main reason to strengthen the sense of community. (3) Residents who have participated in community affairs will increase their workload because of community care activities, resulting in no significant improvement in their sense of community. (4) Altruism and Reciprocity are essential characteristics of the sense of community cohesion.

The Example of using Fieldwork in Education Process

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Teaching geography at primary schools is limited by the lack of teaching lessons in Slovakia. The solution to this problem may be fieldwork, which is considered to be not only a method, but a strong teaching strategy as well. By its very nature, it allows a deeper understanding of the question under consideration, it helps pupils to acquire new knowledge and it helps to develop different abilities and skills directly in the territory.

The aim of the presented pilot study was to implement a short-term form of fieldwork aimed at practicing cartographic skills. The state educational program is referring to this form of teaching, too. It was carried out on a sample of 25 fifth year pupils of primary school in Banská Bystrica in the spring of 2018 using five different activities during two teaching lessons. Activities were focused on map orientation, work with measuring scale, constructing your own orientation plan and orientation in the field. The results of the research pointed to the effectiveness of this form of teaching and the possibility of its involvement virtually at any time of the year. We also presented that the preparation of such a form of teaching is undemanding on finances and time. Regarding these aspects, fieldwork is even comparable with regular teaching preparation.

Comparative study of childcare environment in metropolitan areas in Japan and France: Focusing on formal support and informal support

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This paper clarifies the challenges of the childcare environment in the metropolitan areas in Japan, comparing to that in France. Japan's government, having been facing the declining birth rate and the aging society, started the new childcare system in 2015, with citing the childcare system in France as a sterling example, especially various options for childcare formal support and their birth-rate recover. First, I compared the present condition of the formal childcare provision in Paris and Tokyo from the publicly open database about childcare facilities, existing statistics and research papers. The slow growth of provision of childcare facilities option and spatial mismatch of provision of the facilities in Tokyo, compared to Paris, are caused by 1) the difference of social policy in urban areas between that of Paris and that of Tokyo, and 2) the severe shortage of professional childcare-givers. Second, I clarified the problems they had during their daily child-rearing by the qualitative survey, questionnaire and interview, for Japanese mothers who have experienced child-rearing in Paris and those in Tokyo. The result is that mothers in Tokyo tend to face more psychological difficulties not only physical constraints but also mental constraints or challenges for the informal support by others outside their families in public space, for example the upstairs around the public transportation as well as inside the trains/metro.

Evaluation of pedodiversity in the city of Toruń

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Diversity modeling of environment components is a valuable tool to quantify the spatial pattern of ecosystem components in a specified area. In case of the urban environment, the significant area is covered by Technosols. Their genesis is linked to non-agricultural human activities. Despite many publications on this topic, the problem of soil cover diversity in the urban areas is still under-researched. The aim of the study was to analyze urban soil cover and evaluate pedodiversity using landscape metrics.

The first stage was the selection of the most appropriate data and cartographic materials, which was Urban Atlas 2012 for the city of Toruń. We also used orthophotomap and Database of Topographic Objects to update the land use classes. Following materials were digitalized and reclassified into the map of urban soils according to WRB 2015. Within the hexagonal grid escribed on administrative boundaries of the city, eight selected landscape metrics were calculated. Applying Principal

Component Analysis we eliminated highly correlated metrics. Finally, using point bonitation method, map of soil diversity was created.

Pedodiversity map allowed to identify areas where the biggest fragmentation of the landscape and soil transformation occurred, which, in case of Toruń was mainly residential area. It may be concluded that pedodiversity maps of Toruń can be a valuable tool for the spatial planning of the city to locate the areas of the strongest soil transformation and degradation.

Workshops - *Delavnice*

The innovative iGeo Problem Solving Exercise; a model for schools?

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Since 1996 the International Geographic Olympiad (iGeo) is being organised under the auspices of the International Geographical Union.

The first geography olympiad took place in The Netherlands. Slovenia was among the five founding countries who piloted the first concept, which has stayed very much the same over the years. The most innovative test of the olympiad is a Problem Solving Exercise that includes fieldwork. After a brief look at the iGeo guidelines, an example of a problem solving exercise from a recent iGeo will be presented and the participants will be challenged to redesign and adapt this exercise to suitable sites in Slovenia, or in their home countries.

The workshop leaders are two of the founding fathers of iGeo: Henk Ankoné, co-founder and former co-chair of the International Geography Olympiad (iGeo), from the Netherlands, and Igor Lipovšek, President of the Association of Slovenian Geographers.

Workshop: 90 minutes, includes activities in the “classroom” and “in the field” (in the vicinity of the conference venue).

Core Competency Workshop

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Geospatial technology, once the purview of a small number of specialists with access to high-end computing hardware and software now is accessible to almost anyone using browser-based applications on the Internet or specialized software on desktop computers. With increased accessibility, the technology has quickly become an essential tool in an ever-expanding number of workforce domains. It has also become a recognized profession with practitioners acquiring certification of their knowledge and skills. The expanded use of the technology has put a strain on finding qualified workers to carry out so many different tasks in so many different workforce domains. It has also made it difficult for educators to design curriculum to meet the knowledge needs of students entering the field. Unfortunately, it has also led to significant problems where errors in the use of the technology by the expanding, diverse workforce resulted in erroneous analysis outcomes costing the industry and government not just funds, but also putting the validity of use of the technology in jeopardy. Many of the problems occur because the user does not have the knowledge of basic concepts for managing and visualization spatial data. This workshop will introduce some resources that can be used to determine the core competencies and discuss way to identify the needed basic concepts and core competencies that should be included in academic programs regardless of the field or discipline and prepare well-qualified students to enter the workforce.

Why Europe is a Must!

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In an interactive workshop participants are challenged to share their knowledge of post-war geopolitical and historic developments in European cooperation.

When needed basic “European content” will be added. The idea is to show that basic knowledge of borders and countries in the historical context of the European processes and developments add to the true evaluation of the European core ideas.

Teaching the developments of post-war Europe content adds to a better understanding of the European ideas and perspectives. In this way much more chances for peace and better understanding will develop.

Focus will be on the European institutions Council of Europe and European Union. The knowledge of how these institutions originated and developed is an absolute must for the curriculum! This goes as well for students as for teachers. Lack of this knowledge instead leads to e.g. polarisation and rise of populist movements.

A thorough look into the different national curriculums will be interesting!

Knowledge of the valuable post war period and “mapping” geography and history of the European institutions will lead to a better understanding of Europe. This will legitimize all cooperation within Europe today. This is the core and “drive” of the workshop. An urgent call for the need of better understanding the geography and history of post-war Europe. The content and operations of the European institutions based on essential knowledge will improve a better perception of the European Project/Process. For not knowing might result in not loving! In Dutch “Onbekend maakt onbemind!”

That is Why Europe Is A Must!

Secret of the mobile phone

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In this hands-on workshop for teachers, mobile phones are used as an example for elements resources in our daily lives. The interdisciplinary teaching material was developed for to raise awareness for our resource-rich lifestyle. More than 90% of students own a mobile phone. This workshop will demonstrate how to engage your students in this up-to-date topic. The teaching box contains flash cards of the elements- materials, which are being used as basic materials for the mobile phone production. A mobile phone will be disassembled and linked to the photos from the box. Example exercises from the workshop can be directly transferred to classrooms. Topics covered in this workshop include exercises, PPT about content of the mobile devices and short discussions about the ecological and social impacts of mining. Valuable background material about these issues will be provided as well as information on how to make usage of a mobile phone more sustainable.

Basic idea:

- Mobile phones contain up to 45 elements, 30 of which are raw and expensive metals and same non-metals. Teaching box for every group contains 20 photo examples of elements, which are being used as basic materials for cell phone production.

- Fun and experimental, awareness rising without a pointing finger.
- Makes participants also aware about resources in other devices and that everything we use is linked to Earth (where the resources come from).

Publishing with EUROGEO: Springer Book Series and European Journal of Geography

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One of the principal aims of EUROGEO is producing publication for its members. The two highlighted publications of EUROGEO are the Springer book Series entitled Key Challenges in Geography, and the European Journal of Geography (EJG). The book series addresses relevant topics in the wide field of geography, which connects the physical, human and technological sciences to enhance teaching, research, and decision making. Geography provides answers to how aspects of these sciences are interconnected and are forming spatial patterns and processes that have impact on global, regional and local issues and thus affect present and future generations. Moreover, by dealing with places, people and cultures, Geography explores international issues ranging from physical, urban and rural environments and their evolution, to climate, pollution, development and political economy. The publication of the European Journal of Geography (EJG) is based on the European Association of Geographers' goal to make European Geography a worldwide reference and standard. Thus, the scope of the EJG is to publish original and innovative papers that will substantially improve, in a theoretical, conceptual or empirical way the quality of research, learning, teaching and applying geography, as well as in promoting the significance of geography as a discipline. This workshop will explain to attendees guidelines for submission papers and chapters to these publications.

KamenCheck – use of application for learning basic geological contents

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Application KamenCheck is a learning aid, which can be used for teaching and learning geological content in formal and non-formal education. It can be used in classrooms, as additional motivation tool combined with active learning methods, and in challenges for lessons in nature.

The application is divided on three main chapters. The main part presents the rock identification key. Through a simple decision key, by answering the question with yes or no, the user identify the name of the chosen rock. The application enables independent work by observing and additionally using simple tools and experiments. The other two parts, Rock school and Encyclopaedia, help the user to understand geological concepts and enable further learning. These two parts are crucial support for planning and teaching the contents in the classroom.

An interactive and experimental workshop will provide an insight to use the application as a learning aid and its direct connection with geological objectives of Slovenian curriculum. In addition to the application, special learning sheets will be presented, which were designed with a specific goal and level. The workshop will provide the examples and concepts how the teachers through experiential learning can teach the geology and thus increase the understanding and sustainability of knowledge.

Note: Participant need smartphones with already downloaded application KamenCheck (in Slovenian) or RockCheck (in English) which are freely accessible on Google Play.

Exhibitions - *Razstave*

Interdepartmental Center for Educational Research (CIRD), University of Trieste

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After a presentation of the Interdepartmental Center, the attention will be focused on the initiatives promoted in the fields of educational research and advanced lifelong learning, especially the journal "QuaderniCIRD" and the projects "Multidisciplinary teacher training laboratory" and "[P.I.D.D.AM.](#) permanent laboratory".

Discover the World Education

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As the only tour operator who is a strategic partner of the GA, we provide teachers with educational and enjoyable school trips as well as award winning classroom resources. Join us on our stand to discuss your next school trip and pick up free classroom posters.

Colored Cities

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Two interactive exhibitions of drawings of the cities were organized in 2018 and 2019 where the visitors were invited to color them in public. The author, Amela Špendl, has analyzed the response and shown that such approach increases the attention of the visitors and conveys the message of the exhibition to a much greater extent than just an ordinary display. Communication with the public through involved art has the potential to obtain quality input in many processes related to urban planning. From small-scale community projects that strive to improve single locations or attractions, through discussions of urban interventions in city quarters to large scale strategic planning projects where complex ideas need to be communicated. The results of active involvement of hundreds of people are going to be presented, together with time-series of selected posters, survey results and response from media and professional public.

Eurogeo 2019 and 2020 Educational Field Visit to Marrakech and Atlas Mountains

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Education for All is the highly praised underlying charity that can be reached through a challenging FIELD VISIT in Morocco. A five day/four nights all inclusive programme will show opportunities in 1. Marrakech: urban processes; the Water Museum; history 2. The Agafay Desert: explore all possibilities of geological/biological field work in an arid area 3. The High Atlas Mountains: rural economy in a mountainous area, sustainability and ecology are topics here. This promotional field

visit informs participants on the area and how it could be used in the curriculum for students and their possible assignments here. Part of the revenues of these travels supports Education for All-in which High Atlas village girls after completing primary school education are given the opportunity for further education through the safe and well kept “Boarding Houses” down in the valley and next to their high school. A challenging 5 days / 4 nights all inclusive introductory trip from Marrakech through the desert into the High Atlas Mountains. Educational opportunities and what students can do is highlighted.

Here Technologies

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HERE Technologies, a leading company in digital maps and location services, focused on the concept of location and the potential it has to radically improve the way we do business, the way we get around the way we live, we are shaping the future by redefining what was formerly known as a map. From autonomous driving, to the Internet of Things, HERE Technologies is building the future of location technology through strategic partnerships. Add the power of maps and location to your apps with the robust set of developer tools in HERE Location Services. Incorporate mapping, geocoding, routing, traffic data, positioning and more through REST APIs, JavaScript and native SDKs.

GDi

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GDi has a 30-year-old tradition of operating in the field of geographic information systems (GIS). When we offer our own complete solutions under the GDi Ensemble brand, we ensure efficient management of resources and assets in the area of natural resources, environment, telecommunications, energy, industry, security and agriculture. With the help of our experts and solutions we enable our users to reach and exceed their goals.

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