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VIRTUAL

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34th International Congress
16-20 AUGUST 2021 • Istanbul

VIRTUAL
PREFACE

Dear Colleagues,

The organization of the 34th IGC in Istanbul was unanimously accepted at the General Assembly of the International Geography Union, which was held during the 32nd International Geography Congress held in Cologne between 26-30 August 2012.

The 150-year-old IGC will be held in Istanbul, a world city for the first time in its history. This excites the local organizing committee and our local geography community. LOC, which has started to work since 2012, has done all the work for the congress to take place in the best way. Along with the ongoing preparations in this process, we received more than 2500 applications.

However, the Covid-19 pandemic, which affected the whole world, caused our congress to be postponed for 1 year, as in all events. With the announcement we made in 2020, we shared this postponement with you. When this unexpected situation continued and the pandemic did not stop, we regretfully decided to hold the congress online together with IGU EC.

The excitement of hosting you in Istanbul turned into a bittersweet happiness for us because of the online congress. Although it is a different experience to have the first online IGC in the new world conditions, we tried our best to set an example for future congresses.

We would like to thank all our colleagues, commission chairs, IGU EC who stood by us during this difficult process, and our presidents Ronald F. Abler, Vladimir Kolosov, Yukio Himiyama and Micheal E. Meadows, who have always supported us.

Our deepest condolences to RB Sigh, who passed away untimely a short time ago.

Hoping to meet in Istanbul at another congress to be held face to face...

Prof. Dr. Barbaros GÖNENÇĞİL
Head of the Local Organizing Committee
Dear Colleagues,

At the Regional Geography Congress held in Tel Aviv in 2010 on behalf of the Turkish Geographical Society (TGS), I had submitted a petition to former IGU President Prof. Dr. Ron ABLER that we were nominated for the International Geographical Congress to be held in the coming years of the International Geographical Union (IGU). About 10-11 years have passed on this date. Two major international geography congresses were held in Cologne and Beijing, and we even attended regional geography conferences held in Santiago, Krakow, Moscow and Kyoto.

At the IGU-General Assembly in Cologne in 2012, the “34th International Geography Congress”, which we entered as the only candidate, to be held in Turkey in 2020 was unanimously approved by the votes of 47 countries.

In 2016, we took the IGU flag from China and brought it to Turkey as a representative at the closing ceremony of the “33rd International Geography Congress” in Beijing. Meanwhile, the Vice President of the Turkish Geographical Society Prof. Dr. Barbaros GÖNENÇGİL was elected as the Vice President of IGU with high votes. This is for us, as the value given to Turkey, together with the “17th International Geography Olympiads”, it was the third great honour and happiness.

Both “17th International Geography Olympics”, as well as the “34th International Geography Congress”, were postponed to 2021 by the decision of the TGS and IGU Boards members due to the rapidly spreading Covid-19 flu epidemic in the world and the loss of millions of people and it was decided to be held virtual. This congress, which will be held in the city of Istanbul, which was set out with the motto of “Geography: Bridging the Continents” and spread over two continents between Asia and Europe, will go down in IGU history when it is held on virtual, and thus will be a first.

We are thankful to all the Turkish delegation who contributed to the organization of the congress, to the Istanbul University Rectorate, IGU Board members, members of Commissions, country representatives, session chairs and presenters, to the former IGU Presidents Prof’s ABLER, KOLOSSOV, HIMIYAMA and IGU President Prof. Dr. Mike MEADOWS who have always been supportive to us.

I wish the Covid-19 flu pandemic to be completely eliminated from the world and a successful Geography Congress to pass in health, happiness and peace.

Assoc. Prof. T. Ahmet ERTEK  
President of Turkish Geographical Society
Dear Colleagues,

After a postponement by one year, the 34th International Geographical Congress is finally taking place and nine years of preparation and planning can now bear fruit!

Of course, due to the ongoing COVID-19 pandemic the Congress is taking place in online mode only – although the local organizing committee has gone to considerable lengths to try to ensure that the experience will be as ‘real’ as anything ‘virtual’ can possibly be.

The postponement of the original Congress to 2021 at least allows us to reflect on the history of the discipline – as it is 150 years exactly since the very first International Geographical Congress took place, in Antwerp, Belgium from 14th to 22nd August 1871.

It was at this congress that a proposal was made to establish Greenwich as the prime meridian, although this was only finally accepted 13 years later. Admittedly, these days our discussions may not lead to anything quite so fundamental, but we can be sure that the papers presented here are indicative of the diverse but crucially relevant nature of Geography today and that the lively discussions and networking will offer great opportunities to further develop and orientate our work towards meeting the enormous local, regional and global challenges we currently face – not least the coronavirus crisis itself.

I fervently hope that the virtual connections we make here will blossom and culminate in our meeting face-to-face to celebrate the centennial of the International Geographical Union in Paris this time next year. For now, I wish to thank the participants for their contributions and to congratulate the local organizing team on their tremendous efforts in bringing us together virtually. I am sure that the event will be heralded as a great success despite the ongoing constraints.

Prof. Mike MEADOWS
IGU President
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How to Use Landscape Images in Geography Textbooks: Example of Some Countries

Prof. Dr. Eyüp Artvinli

Eskişehir Osmangazi University, Faculty of Education, Eskişehir, Türkiye

The aim of this study is to compare the landscape images in geography textbooks of Turkey and some other countries. Comparison will give an understanding about the presentation of different landscapes of different countries and cultures of people. Geographical imagination of landscape often gives an idea to people about that place or phenomena and it create a positive or negative opinion about that place, city or country. The methodology of this research based on content analysis. As the first step the landscape photos are determined and categorized in the geography textbooks of countries. In this way it can be possible to demonstrate the kinds of landscapes imagination to people in countries. After those researchers focused on to determine about to find how to interpret inside of the texts. In this way it is possible to link to different appearance of physio-geography dimension in countries. It is concluded that landscape imagination given in geography textbooks have different effect in different countries and people. Thus, it is important to choose right landscape photos in geography textbook in order to give right message and leave a positive imagination for the people. According to using landscape photos in geography textbooks often reflect the term of social life and viewpoint of that society about human-nature interaction and relations between them. In this way, by comparing or analyzing geography textbooks, it can be observed and conclude the changes and development of the ideas of societies about nature and environment and its use by human.

Introduction

The significance of students’ imagination extends beyond scientific interest. Young people are the future decision makers, hence it is essential to know what kind of images they are exposed to, and how they view and understand the world, since people behave according to how they see the world and not how the world really is (Schlitz, Vieten, and Miller 2010).
Landscape, despite being a key analytical concept in several social and environmental sciences (Wylie et al. 2009), lacks clarity and unambiguity, mainly because it conveys a complex and multivocal relationship between the natural environment and human society. It is both the result of this interaction and concurrently the process itself. This dynamic aspect was emphasized by Mitchell (1994), who wittily explained landscape to be more a verb than a noun. Connected to a landscape’s structural aspect, one must recognize both tangible and intangible elements. Among numerous scholarly orientations (Shaw and Oldfield 2007), that of Cosgrove (1998) and Cosgrove and Daniels (1988) is relevant to this paper: landscape as a way of seeing and representing the world. Cosgrove (2003) further elaborates: ‘Landscape thus denotes primarily geography as it is seen, imaged and imagined.’ Implicit in this statement is the representation of landscapes which can take a myriad of (not only) visual forms with photography having a prominent role.

Photographs have been effectively and widely used in research since the advent of photography and have proved their importance for geography’s scholarly paradigm. The fundamental use of photography is for gathering and evidencing information (Schwartz 1996). Equally important is its role in constructing and transmitting geographical knowledge (Rose 2008), thereby having a long tradition in schooling (Hall 2015). It has also been a powerful research method or practice (Cooper 2017). Moreover, the authority or ‘constructive’ power of photography (Van Leeuven and Jewitt 2004) goes far beyond the classroom into the general sphere of communicating ideas about the world and shaping one’s worldview.

However, it was only at the end of the twentieth century that photographs became a subject of geographical inquiry. Its usefulness as a research subject is based on the fact that photographs (including scientifically conceived photographs) have ‘layers of meaning beyond the visual facts presented in the image themselves’ (Schwartz 1996). One of the most influential analyses of photography is Lutz and Collins (1993) content analysis of the National Geographic journal. Further impetus was given by applying the concept of geographical imagination and the visual turn in humanities which brought to light visuality and photography as a primary source for examination in cultural and historical studies.
(Cosgrove 2006; Rose 2001). Photo elicitation methods have proved to be effective in gaining an insight into children’s spatial perceptions (Leonard and McKnight 2015; Pyyry 2015).

**Purpose of the Present Study**

The aim of this study is to compare the landscape images in geography textbooks of Turkey and some other countries. Comparison will give an understanding about the presentation of different landscapes of different countries and cultures of people. Geographical imagination of landscape often gives an idea to people about that place or phenomena, and it create a positive or negative opinion about that place, city or country. The methodology of this research based on content analysis. As the first step the landscape photos are determined and categorized in the geography textbooks of countries. In this way it can be possible to demonstrate the kinds of landscapes imagination to people in countries.

**Method**

**Sample**

In this section, the research method, study group, data collection tool and its application and the techniques used in data processing and analysis are discussed. This research occurs in a qualitative pattern. Qualitative research can be defined as research in which qualitative data collection methods are used, such as observation, interview and document analysis; and a process is followed for the realistic and holistic presentation of perceptions and events in a natural environment (Yıldırım and Şimşek, 2016, p. 45). Research data was obtained through document analysis, which is a qualitative research method covering the analysis of written materials containing information about facts and events (Wachter, 2010).

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author’s or user’s perspective" (Wachter, 2010).
Design

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

Results

It is noteworthy that there are few images used in textbooks taught in Turkey. In particular, as the age level decreases, the earth shapes of the images should take up more space, while on the contrary, pages with fewer images and more writing have been placed. However, when examining Australian textbooks, the importance given to visuals increased as the age level decreased. Again, when studying textbooks in the UK, it seems that the pages of landforms are more actively involved.

As the first step the landscape photos are determined and categorized in the geography textbooks of countries. In this way it can be possible to demonstrate the kinds of landscapes imagination to people in countries. After those researchers focused on to determine about to find how to interpret inside of the texts. In this way it is possible to link to different appearance of physio-geography dimension in countries. It is concluded that landscape imagination given in geography textbooks have different effect in different countries and people. Thus, it is important to choose right landscape photos in geography textbook in order to give right message and leave a positive imagination for the people.

Conclusion

It is concluded that landscape imagination given in geography textbooks have different effect in different countries and people. Thus, it is important to choose right landscape photos in geography textbook in order to give right message and leave a positive imagination for the people. According to using landscape photos in geography textbooks often reflect the term of social life and viewpoint of that society about human-nature interaction and relations between them. In this way, by comparing or analyzing geography
textbooks, it can be observed and conclude the changes and development of the ideas of societies about nature and environment and its use by human.

References


Teaching Geography at the Universities in Russia: Current Challenges and Prospects

Nina N. Alekseeva¹, Julia Greenfeld² and Vladimir E. Shuvalov³

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The paper discusses the status of university Geography in the Russian Federation. The study was based on the inventory of the web-sites of about 50 universities and questioning the staff from selected leading universities. There are more than 50 universities in Russia offering programs in Geography, but there is no distinct profession “Geographer” in the national Classification of Occupations (2014) as well as in International Standard Classification of Occupations (ISCO-2008). The gradual loss of position of Geography programs at Russian universities in favor of Environmental studies, Tourism, etc. is discussed. The features of educational standards are characterized, indicating the main professional functions and skills (competencies) of geographers, as well as professional profiling. There is evident shift to “generic” geographer training at the majority of Russian universities, with few of them having numerous specific majors. The paper suggests some measures needed to effective adaptation of Geography at the universities facing the increasing competition with other areas of education.

Keywords: Geography, undergraduate and postgraduate programs, competences, curricula, Russia.

Introduction

The training of geographers at Russian universities has been going on for more than two centuries. Geography as a university science was recognized in Russia by the Charter of Moscow university since 1804 (Soloviev, 1964). The first geographical departments were established at Moscow University in 1804 and in St. Petersburg in 1819. In the middle of the
last century 29 universities of the USSR trained geographers and 68 pedagogical institutes trained geography teachers. The number of geographers who graduated from Soviet universities, as of the 1950s – 1970s, numbered in the thousands a year.

Currently, 52 universities in 48 regions of the Russian Federation provide education in geography at the bachelor's level on a regular or periodic basis. Postgraduate training in Geography is being implemented in more than 30 universities. Currently, admission to Geography programs in many universities is not carried out every year.

Average annual recruitment 2016–2020 for budgetary places (full-time education) was about 1200-1450 people for undergraduate programs and 630-970 people to the master's degree programs in Geography, with a tendency to reduce admission to both levels of education (Table 1). The admission to educational programs in Geography, by decision of the university management, is often reduced in favor of other areas of study, such as Environmental Sciences or Tourism, the field of employment of which is more clearly defined and for whose graduates there is a demand from the labor market in a particular region of the country. The change in the status of geography in Russian universities also occurs as a result of higher education reforms at federal level, which do not always have a positive effect on the curriculum.

Purpose of the present study was to summarize the current status of the university geographical education in Russia in the context of constantly changing structure of higher professional education and emerging demand for the “generic” geographer.

**Materials and method**

Data collection implied the inventory of web-sites of more than 50 divisions of the universities all over Russia, with educational programs in Geography, as well as questioning of the staff from leading Russian universities. The questionnaire included 24 questions about recruitment, curriculum structure, practices and internships, employment of graduates, workload on teachers, etc. Data base of Federal educational and methodological association on Earth Sciences was used.
Changing Status of the Geography Divisions at the Universities

Over the past 20 years, there have been cardinal institutional changes in the structural divisions of universities with educational programs on Geography. As part of the ongoing reorganizations and consolidations in Russian universities almost half of the faculties of Geography became part of the joint Institutes, in the overwhelming majority of cases having lost their independent status. Out of 52 universities, only 8 universities have now educational and scientific structural subdivisions with the title Geography proper (as "Faculty of Geography", "Faculty of Geography" or "Institute of Geography"). More often Geography is present in the Natural Sciences or Earth Sciences institutes or in combination with other disciplines. Figure 1 depicts the ag cloud of the titles of faculties and institutes of the Russian Federation universities with educational programs in Geography.

The loss of the previously won university status and, in general, positions in most universities in Russia led to the transition of geography from the faculty level to the level of departments, where it began to be organizationally combined with other areas of training (Alekseeva et al, 2015). For example, at the Kazan Federal University, there is the Department of Geography and Cartography, at the Kemerovo State University - Department of Geology and Geography, etc. At the same time, the staff of teachers has also significantly decreased. As an exception, in 2020 the first admission to a bachelor's degree was carried out at the new Faculty of Geography and Geoinformation Technologies, which opened at the National Research University Higher School of Economics in Moscow.

Specialization or “Generic” Geography?

Wide variety of scientific directions and systems of specialization in geography was the important advantage in geography teaching since the start of higher geographical education (Ottens, 2011). For the 20th century Geography became quite fragmented with great variety of disciplines (Whalley et al, 2011). At the universities of the Russian Federation, undergraduate educational programs are implemented in more than 35 directions (majors). In most of the universities of Russia, in the last 10-15 years, due to various reasons (in the course of the reform of higher education, the unification of the geographic departments often with their subsequent liquidation, etc.), there has been a pronounced shift from the
relatively narrow specialization of educational programs towards their integration. The most common of them are "General geography" as a major (available at 25 universities), "Recreational geography and tourism" (21 universities), "Physical geography and landscape science" (15 universities), "Economic and social geography" (15 universities).

A relatively wide specialization of educational programs is still preserved in a number of large universities, primarily at the Faculty of Geography of Moscow State University (6 bachelor's majors) and in some other relatively large geographic teams, but this is rather the exception than the rule. This trend is likely to increase, as it is in line with the plans of the Ministry of Science and Higher Education of the Russian Federation for the next consolidation of training areas and a significant decrease in teaching hours for the specialization of university students. As a result, the level of specialization in the preparation of students in the direction of Geography has dropped sharply.

**General Framework of the Curriculum in Geography**

New versions of university educational standards for undergraduate and postgraduate programs on Geography are to be introduced at the universities of the Russian Federation at September, 2020. They were compiled taking into account professional standards and European methodological approaches. In the emerging system of professional standards, describing the skills and labor functions of the employees, the place of graduates from the Departments of Geography is very unclear. There is no distinct profession “Geographer” in the National Classification of Occupations (2014) as well as in International Standard Classification of Occupations (ISCO-2008).

According to the recently adopted Federal state education standards (FSES) in Geography for undergraduate and postgraduate programs (they form the basic framework for the Russian higher education), the students should be trained to fulfill specific professional tasks. FSES in Geography include the following types of the professional tasks: research; pedagogical; organizational and managerial; design and survey tasks; expert and analytical tasks; cultural and informal education tasks. The universities can focus their curricula on one or several professional tasks.
As elsewhere, higher education is being evaluated in terms of its ability to deliver skill-rich graduates (Solem et al, 2008). In the Russian Federation the educational process is organized through competences approach. In the learning process, students must acquire three types of competencies (or skills): universal (11 at undergraduate level /6 at postgraduate level); basic professional (6/6) (they form a mandatory part of Curriculum) and professional competences. The latter are demand-driven and are established by a university on the basis of professional standards or on the basis of an analysis of requirements from the regional labor market. Universal competences or transferable skills are achieved throughout the learning process, they include social communication, setting goals, critical thinking, the ability of implementation of projects, teamwork and leadership, etc. Transferable skills and basic professional competences (like basics in Earth Sciences, Geography, Cartography, etc.) should be achieved by students at any university of the country.

Students gain the above competences and skills through: 1) the modules (disciplines), 2) field work and internships, 3) final certification. The compulsory part of the bachelor’s program includes disciplines (modules) and practices that ensure the formation of basic professional competencies. For the undergraduate level they include: 1) the ability to apply basic knowledge in the field of mathematical and natural sciences, knowledge of the fundamental sections of Earth sciences; 2) the ability to apply theoretical knowledge about the patterns and characteristics of the interaction of natural and social spatial systems in the professional activity; 3) the ability to apply basic geographic approaches and methods when conducting comprehensive and sectoral geographic research at different territorial levels; 4) the ability to use standard software products, information databases to solve the professional problems in the field of Earth sciences, taking into account the requirements of information security; 5) capability of collecting, processing, primary analysis and visualization of geographic data using Geographic information technologies; 6) ability to design, represent, defend and disseminate the results of his professional and research activities.

Professional profiling is provided by the courses of the variable part of the Curriculum, therefore, the number and titles of majors are determined by the universities themselves. Many experts who responded to our questionnaire emphasized the importance of expanding training in practice-oriented majors aimed at spatial planning and design activities,
environmental engineering surveys, environmental impact assessment, climate change adaptation, etc. But this can be afforded by fairly large universities with a large staff, laboratory facilities, technical support, as well as links with the real sector of the economy.

Structure and Scope of the Educational programs (Geography)

The undergraduate program is 240 credits (in Russia one credit is equal to 36 academic hours) and is designed for 4 years, the postgraduate education programs are designed for 120 credits and 2 years. At the Faculty of Geography, Moscow State University the Curriculum includes core modules (38-45 % of total credit load), modules of specialization and elective courses, as well as field work and internships (20%). In Russia, the share of the teaching load devoted to practice is several times higher than in any European university (Kasimov et al, 2013). The geographical education is delivered at the Faculty of Geography, Moscow State University, within 6 majors. Figure 2 presents the design of the curriculum, taking into account the types of competencies achieved.

Classical geographer with broad basic education and narrow specialization is giving way to a "generic geographer" capable of solving urgent geographical problems on the base of the synthesis of natural science and socio-economic knowledge. Such areas as complex regional analysis, spatial development strategies, territorial planning and design, ecological geography, climate change are becoming more and more popular. In these conditions, a new strategy for the development of geographic university education is urgent with an emphasis on training a "generic geographer" capable of applying a whole set of modern approaches and methods for studying nature and society using integrative thinking. Nowadays modern digital technologies and skills in GIS are basic general requirements, as well as ability to data collection, interpretation, analysis, and its visualization. This objective trend testifies to the "drift" of geography towards information systems and technologies, methods of mathematical modeling, processing of "big data", its further mathematization and technologization.

But geographer is not equal to GIS technician, in the process of geographers teaching, the most significant components of the profession, regardless of the specialization and country affiliation, are: spatial thinking, the ability to work in an interdisciplinary format, field
research skills, the ability to work professionally with spatial data, including maps, remote sensing data, and mastery of modern GIS technologies (Hill et al, 2018). The concepts of scale and space still play significant role in the training of geographers.

The professional functions of an interdisciplinary (generic) geographer should include the following activities: performing field and surveyance work, preparing analytical materials, implementing geographical projects, conducting a comprehensive geographical expertise of projects and works. But there is serious concern about the insufficient representation of Geography in the emerging system of professional standards in Russia and in the National Classification of Occupations based on ISCO-08.

Conclusion

Plans of the Ministry of Science and Higher Education of the Russian Federation for further consolidation of areas of training and a significant reduction in teaching hours for the specialization of the students makes it difficult to train qualified geographers. The era of specialization in the training of geographers at Russian universities is most likely over. It still lingered, primarily at the Faculty of Geography of Moscow State University and in some other relatively large geographical teams. But for most of the regional universities that train geographers, this is already a fait accompli. The need of a new strategy for the development of geographic university education with an emphasis on training a "generic geographer" capable of applying a whole set of different modern approaches and research methods of both Nature and Society. Lack of institutional recognition of the profession "Geographer" sets a task to its implementation at labor market and in the practical activities of organizations/companies. Support of educational programs in geography by employers and relevant professional associations is extremely important at the current time.
References


Table 1

Admission places to the educational programs in Geography, 2016–2020

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
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<td>1440</td>
<td>1414</td>
<td>1307</td>
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<td></td>
<td></td>
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<tr>
<td>Postgraduate</td>
<td>967</td>
<td>1005</td>
<td>938</td>
<td>603</td>
</tr>
<tr>
<td>programs</td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>

Table 2

Curriculum of undergraduate program in Geography, Faculty of Geography, Moscow State University and types of competences (skills) gained in the process of learning

<table>
<thead>
<tr>
<th>Skills</th>
<th>1 year</th>
<th>2 year</th>
<th>3 year</th>
<th>4 year</th>
</tr>
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<tbody>
<tr>
<td>Basic (general)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. History</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Foreign languages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Economics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Physical Culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Biology</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Chemistry</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Physics</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Informatics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic professional</td>
<td>Professional</td>
<td>1 + 3 + 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------</td>
<td>-----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Introduction to Physical Geography</td>
<td>• Cartography</td>
<td>Field practice (12 credits)</td>
<td></td>
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<tr>
<td>• Geomorphology with the Basics of Geology</td>
<td>• Geoinformatics</td>
<td>Field practice (12 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Soil Science</td>
<td>• Aerospace research methods</td>
<td>Internship (12 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ecology with the Basics of Biogeography</td>
<td>• Physical geography of Russia</td>
<td>Final examinations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Topography</td>
<td>• Economic and social geography</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Landscape Science</td>
<td>• Population geography with the basics of demography</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Introduction to Economic and Social Geography</td>
<td>• Economic and social geography of Russia</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Courses of specialization
- Elective courses
- Research project
- Courses of specialization
- Elective courses
- Research thesis

Environmental Impact assessment
- Economic and social geography of foreign countries
- Sustainable development
Figure 1

Tag cloud depicting the titles of faculties and institutes of the Russian Federation universities with educational programs in Geography
The aim of this research is to determine the processes and levels involved in Jean Piaget's spatial development stages of a child through geographical learning theory. It is very important that spatial perception is formed during the child's development process. Geographical education begins to be given to the child in early childhood. Looking at Piaget's theory of development, it is possible to reach the same conclusion again. In determining when children are ready for the introduction of geographic concepts in school, geographic education has been more concerned with the sequence of children's development than with their learning, in a psychological sense. The dominant theoretical paradigm in geographic education is that provided by the noted theorist and researcher in child development, Jean Piaget. In Piaget's view, all cognitive development, including spatial cognition, goes from lower to higher levels of conceptual and symbolic functioning, part of a more general set of competencies acquired in a stagewise, lock-step fashion. For some reason, spatial cognition is important in geography. First of all, spatial cognition provides questions of geographic interest in their own right, given that cognition about space and place is an expression of human-environment or human-world relations. If these queries are asked and questioned by the mind of a child who is still a young mind, it is actually a result of natural selection. For this reason, it is also important for the child to have spatial cognition skills. This research was created to express how spatial cognition levels can be acquired in children in early childhood.
How to Use Landscape Images in Geography Textbooks: Example of Some Countries

This paper considers the relation between the development of spatial cognition and children’s use of maps and models. A new theoretical perspective is presented that takes into account the influences of maps on the development of spatial cognition. Maps provide a perspective on spatial information that differs in important ways from the perspective gained from direct experience navigating in the world.

Spatial thinking has always been a fundamental cognitive skill for competency in geography. However, interest in it has increased in recent years as technological advances have driven political and societal changes producing a renewed awareness of its importance. This is especially true in the context of geospatial technologies (GST). The growth, expansion, and power of GST demands a citizenry with well-developed spatial thinking skills. But research exploring spatial thinking in an educational context is scant. This chapter explores the current position of spatial thinking in education.

Spatial thinking has always been a fundamental cognitive skill in geography. Space is a key organizing concept for our discipline. Moreover, geographers use spatial thinking supported by spatial representations such as maps to: pose geographic questions; collect, organize, and analyze geographic information; and explain and communicate geographic patterns and processes—practices critical to the development of 21st century competencies (Bednarz, Heffron, & Huynh, 2013). Technological factors including the explosion of location-based, geospatial technologies (GST), such as geographic information systems (GIS), and political and social forces have combined to drive a renewed awareness of, and interest in, spatial thinking. These developments have also contributed to “the spatial turn” in geography (Goodchild & Janelle, 2010).

Spatial thinking can be defined as a constructive combination of cognitive skills comprised of knowing concepts of space, using tools of representation, and applying processes of reasoning (NRC, 2006, p. 12). Spatial thinking allows people to use space to model the world (real and theoretical), structure problems, find answers, and express and communicate solutions. The inclusion of concepts of space makes spatial thinking unique from other types of thinking (NRC, 2006). Concepts of space are declarative forms of
knowledge, the building blocks for spatial thinking. Location, dimensionality, continuity, pattern, spatial association, network, and proximity are examples of spatial concepts that have been explicitly recognized by researchers (Gersmehl, 2006; Golledge, 2002; Janelle & Goodchild, 2009).

Understanding spatial thinking in terms of human development and learning is a necessary precursor to discussions of current trends, and interest, in teaching spatial thinking. One of the most important debates informing spatial thinking in education concerns the extent to which spatial thinking is, in some sense, innate. Many researchers have attempted to conceptualize the development of spatial thinking (Kuipers, 1978; Montello, 1998; Newcombe & Learmonth, 2005). These theories can be grouped into four broad categories: nativist, Piagetian, Vygotskyan, and interactionist (Kim, Bednarz, & Kim, 2012). Nativists argue that children are born with a biologically determined level of spatial thinking, and, even though spatial thinking may develop with age and experience, biology pre-determines ability. Contrary to the nativist approach Piaget argued that “infants are born without knowledge of space, and without a conception of permanent objects which occupy and structure that space” (Newcombe & Huttenlocher, 2003). Piagetians propose a sequential progression of understanding from topological space to projective and Euclidean space (Piaget & Inhelder, 1967).

**Purpose of the Present Study**

The aim of this research is to determine the processes and levels involved in Jean Piaget's spatial development stages of a child through geographical learning theory. It is very important that spatial perception is formed during the child's development process. Geographical education begins to be given to the child in early childhood. Looking at Piaget's theory of development, it is possible to reach the same conclusion again. In determining when children are ready for the introduction of geographic concepts in school, geographic
education has been more concerned with the sequence of children's development than with their learning, in a psychological sense.

Method

Sample

In this section, the research method, study group, data collection tool and its application and the techniques used in data processing and analysis are discussed. This research occurs in a qualitative pattern. Qualitative research can be defined as research in which qualitative data collection methods are used, such as observation, interview and document analysis; and a process is followed for the realistic and holistic presentation of perceptions and events in a natural environment (Yıldırım and Şimşek, 2016, p. 45). Research data was obtained through document analysis, which is a qualitative research method covering the analysis of written materials containing information about facts and events (Wachter, 2010).

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

Design

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

Results

The widespread availability of GSTs, however, does not ensure that users can employ these technologies competently. For example, an over-reliance on navigation systems has resulted in people losing their way. In remote locations, such as California’s Death Valley, the lack of “competent application” of GST can be a matter of life and death (Clark, 2011).

Previous research indicates that a spatial-thinking curricula must consider five issues. First is the importance of the individual learner. Spatial skills develop uniquely for different individuals. Sex, experience, age, culture, and education all play a role in the acquisition of key spatial thinking competencies. Second, context matters. Research confirms that expertise
develops in specific contexts or disciplines and that transfer from one area to another is not automatic (National Research Council, 1999).

**Conclusion**

The implications for geography educators are immense. People will need and want to know how to acquire, interpret, and contribute geographic information. The task increasingly is to prepare technologically enabled, spatially literate individuals. It will be a challenge (but also a considerable opportunity) to plan and to provide a level of understanding of spatial concepts and reasoning processes through geography (Bednarz, Heffron, & Huynh, 2013).

The dominant theoretical paradigm in geographic education is that provided by the noted theorist and researcher in child development, Jean Piaget. In Piaget’s view, all cognitive development, including spatial cognition, goes from lower to higher levels of conceptual and symbolic functioning, part of a more general set of competencies acquired in a stagewise, lock-step fashion. For some reason, spatial cognition is important in geography. First of all, spatial cognition provides questions of geographic interest in their own right, given that cognition about space and place is an expression of human-environment or human-world relations. If these queries are asked and questioned by the mind of a child who is still a young mind, it is actually a result of natural selection. For this reason, it is also important for the child to have spatial cognition skills. This research was created to express how spatial cognition levels can be acquired in children in early childhood.

**References**


Changing US Educational Landscape in Geography

Melvin Arthur Johnson
University of Wisconsin Green Bay, Manitowoc Campus, USA

The educational landscape in the United States is changing. Because the economy is doing well, there are fewer people going to colleges and universities. But coupled with that decline, another change or challenge is the rapidly declining number of males entering and graduating from colleges and universities. For the past decade or so the number of males attending colleges and universities has declined to the extent that now there are more females than males in higher education. Traditional male bastions of higher education, i.e. Harvard and Yale, now frequently admit more females than males into their freshmen classes. Currently there are more than 100,000 fewer male students in colleges and universities than females. This number is in direct contrast to the actual ratio of males to females in the 18 to 24 year age cohort (approximately 51-49%). A typical example is the school at which I teach, the University of Wisconsin Green Bay, the student body is approximately 69% female. The population of the 16-county area from which most of the students are drawn is 53% male. The other institutions of higher education in the same region are also seeing similar scenarios with a larger female student population than male. The other interesting aspect is that this disparity in the number of males versus females in college and university enrollment is common among all recognized ethnic groups: European-American, African-American, Asian-American, Native American, Latin American, and Pacific Islander American. As a professor, this change has also required some adjustment to my teaching of geography and research. The political, social, and economic ramifications are tremendous with undereducated males having greater influence in the political arena.

**Keywords:** Higher Education, United States, Male vs. Female enrollments
Lionel Tiger in the prologue to the 2004 (3rd printing) or his book *Men in Groups* indicated that one of the most consequential changes is in the area of education. He made the following observation about the change in the relations between men and women.

“Since *Men in Groups* was first published, there has been phenomenal change in the relations between men and women, girls and boys, and in the public sphere. One of the most consequential, which is still gathering steam, is in education.” (Tiger, 2004)

Tiger goes on to say that our educational leaders and decision makers have yet to fully confront the very complex and important reasons which indicate why social mobility and occupational security is becoming increasingly smoother for women than men. In other words, getting into tertiary level education, completing that education, and then getting a position is becoming more challenging for men than women. Part of the problem originates in the primary and secondary educational setting, in the home, and in the community at large.

I began noticing this change in the school where I am currently teaching. Anecdotally, while passing through the halls, I noticed that the number of men in the STEM classes was fewer than the women, and that the number of men in the “pre-college” remedial courses was higher than the number of women. I also was struck by the number of news commentaries which also addressed this situation not only in the United States but elsewhere. In May, 2014, Sarah McHaney during the *PBS Newshour* made the following comment: “…the [academic achievement] gap between girls and boys exceeds that of any other two groups.” Melissa Benn in an article in *The Guardian*, titled “The education gender gap is bad for girls as well as boys,” stated that “More girls are applying to university this year….overall girls now ‘outperform’ boys from the early years through to postgraduate qualifications.” Benn’s final comment is interesting and possibly provides a clue as to why we see fewer males succeeding in school. She notes that females are easier to teach, they are more compliant, or less challenging that boys and consequently respond more positively to the teachers in the schools. Both Benn and McHaney indicate that it is not just ethnicity where we see a gap, but the biggest gap is gender related.
Lini S. Kadaba, Lehigh University, Education Department, stated in her article “The Reverse Gender Gap” that

“...according to the U.S. Department of Education data, boys receive 71 percent of school suspensions. Boys make up 67 percent of special education classrooms. Boys are five times more likely than girls to be labeled hyperactive and 30 percent more likely to flunk or drop out of school.”

“Some have posited...that female teachers instinctively reinforce ‘female’ behavior and fail to acknowledge, or even punish, the gender-specific behaviors of boys.”

These statements would also support what Benn indicated as stated previously. The comment about female teachers is most interesting. Although it is not something that I have observed, but from my experience in the classroom, I can see how this might be the case, especially in the primary and secondary schools.

Schwartz and Han in their article “The Reversal of the Gender Gap in Education and Trends in Marital Dissolution" state “...the relative stability of marriages between educational equals has increased.” They go on to indicate that divorce rates among educated women have dropped. Also, that education is the best indicator of marriage stability and that difference in pay and position are no longer indicators for marriage stability. This does beg the question, “What happens when there are fewer educated males than females in society?”

In an article written by Lopez and Gonzales-Barrera for the Pew Research Center Newsletter reported that:

“The enrollment gender-disparity is most prevalent amount minority populations, especially among Hispanic and black students. As the Pew Research Center reported in 1999, Hispanic men and women enrolled in college at essentially equal rates, while black men outpaced women by 9 percentage points. By 2012, however, those numbers had drastically shifted: Hispanic women and black women had increased enrollment rates, outpacing their male counterparts by a 13- and 12-percentage point gap, respectively.”
Table 1

Share of recent high school completers enrolled in college the following October

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Women</th>
<th>Men</th>
<th>% point gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>76</td>
<td>62</td>
<td>13</td>
</tr>
<tr>
<td>Black</td>
<td>69</td>
<td>57</td>
<td>12</td>
</tr>
<tr>
<td>White</td>
<td>72</td>
<td>62</td>
<td>10</td>
</tr>
<tr>
<td>Asian</td>
<td>86</td>
<td>83</td>
<td>3</td>
</tr>
</tbody>
</table>

One group, the Native Americans, were not forgotten, they were subsumed under the category “White” as their numbers were too small to discriminate. Based upon personal observations, again anecdotally, substantially more Native American females than males complete the equivalent of high school and continue their educations.

If one were to accept that the general population of the United States has a higher female population than males, this would not seem so illogical. However, when one considers the population of the traditional college age (18-24), the opposite is true. In 2020, the percentage of males to females was higher than for the general population as a whole. In fact, more males are born in the U.S. than females, approximately 105 males /100 females. The trend does not reverse until the age 40, see the accompany population pyramid for the United States on the next page. One will notice that the percentage of males is larger than for the females.
In Wisconsin, where I live and teach, the comparison is also noticeable especially in the college age population, see the table on page 7. In 2017, one will notice that the number of males between 18-24 is higher than females. (Wisconsin, State) The number of males with a high school diploma is greater than the females, but in terms of higher education, beyond high school, the numbers are reverse, with females out numbering males with any education college education. These numbers are further reflected in the enrollments for the University of Wisconsin as a system. All but two out of 13 institutions in the system report higher enrollments of females than males. In some cases the difference is significant, such as the case of my own university, as stated before, which is approximately 69% female.
<table>
<thead>
<tr>
<th>Population 18 to 24 years</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>561,451</td>
<td>285,875</td>
<td>275,576</td>
</tr>
<tr>
<td>Less than high school graduate</td>
<td>63,332</td>
<td>36,445</td>
<td>26,887</td>
</tr>
<tr>
<td>High school graduate (includes equivalency)</td>
<td>178,370</td>
<td>100,115</td>
<td>78,255</td>
</tr>
<tr>
<td>Some college or associates degree</td>
<td>258,752</td>
<td>123,378</td>
<td>135,374</td>
</tr>
<tr>
<td>Bachelors degree or higher</td>
<td>60,997</td>
<td>25,937</td>
<td>35,060</td>
</tr>
</tbody>
</table>

In 2017, University of Wisconsin President, Ray Cross, announced a restructuring of the UW Colleges (a system of two-year liberal arts colleges) that effectively eliminated that institution and merged the 13 campuses into seven (7) of the comprehensive universities. The basis of that move was the falling enrollments and the future demographics of the state in terms of high school enrollments and graduation rates. What was not taken into account was a scenario of balanced female and male enrollments. If the enrollments at the UW schools was consistent with the state’s population, the total enrollment for the system would jump from 171,000 to 179,000. Effectively reducing the decline in university wide enrollments by 50%. Although not a complete solution to the problem of declining enrollments, a definite step in the right direction. (University of Wisconsin)

The COVID pandemic starting in 2019 also saw a drop in enrollments university wide for the 2020-2021 academic year. The decline in general enrollments was six (6) times greater for males than females, thus exacerbating the situation.

In 2017, James Shelley published ten (10) reasons why he felt men weren’t going to colleges. As the directort of the Men’s Center at a community college in Ohio, he observed
the statistics and interviewed some of the men who came to his center. The results were then published in an on-line men’s study journal. His assessment was quite revealing. Below is a listing of the reasons that attempt to partially explain why men are so reluctant to go into higher education.

1. **The allure of a “good job” out of high school.** There currently more high-paying jobs for male high school graduates rather than female. These jobs are in decline, except in areas such as Northeast Wisconsin where there is a very active manufacturing base. Many of the jobs are hazardous or physically demanding and the future prospects for 10, 15, or 20 years down the road are not good for the individual. Retooling skills, which can be difficult later in life, can be a prospect for new students who are returning to school.

2. **Gender-cleansing of “boy behavior” in education.** This relates to the zero tolerance policies (zero conflict, etc.) which were vigorously introduced in the 1990s to respond to the potentially less secure environment. Since then these policies have largely targeted boys—90% of discipline problems. Michael Gurian and Christina Hoff Sommers in their respective books have expressed concern that the “pathologizing” of “…boy behaviors have contributed to a classroom of suppression, which negatively affects boys who have a greater reliance on a kinesthetic learning style.” Add to this, Shelley says is the restrictions on outside recess time and curbing of games favored by boys. According to a University of Michigan study, the number of boys who said they disliked school rose 71% between 1980-2001.

3. **Education for career success more important to women.** The perception that the workplace is still a man’s world still exists. Shelley indicates that the females students believe they need all of the educational “backing” they can obtain in order to succeed professionally. Department of education data indicates that 8th and 12th grade girls have higher educational aspirations than boys.

4. **Title IX.** Although more males participate in athletics in high schools than girls, this practice has effectively been reversed in colleges by the federal government. If the college does not have athletic opportunities which reflect the general population of
the student body or the population of the region, they are in violation of Title IX for access to federal resources.

5. Indifference to the literacy gap between boys and girls. Boys have consistently lagged behind girls by one-and one-half years in reading and writing skills, in general. The gap begins in kindergarten with boys exhibiting delayed language development compared to girls. This gap establishes an enduring performance scenario, it may also engender an early dislike of school. Couple this gap with the tracking of students throughout their academic career and it could also lead to inappropriate recommendations for higher education.

6. Women have a more cooperative approach to learning. Men have a more independent approach to learning, consequently, women are more likely to use academic support services than males. They are also more likely to approach a professor or another student for a post-class discussion. It would appear that women are better at developing the web of supportive relationships necessary to achieve success in college. A possible cause for this difference is male “bravado”, that is not wishing to display any behavior that resembles a weakness. Shelley and others have noted this is a fallacy and the male students actually inflict harm on themselves and women through rigid adherence to historical definitions of masculinities. For male students channeling appears to be more effective than changing. K-12 boys, for example, are more likely to cooperate in learning environments that emphasize action-oriented group work. Baltimore’s all-boy schools became quite famous for implementing more action-oriented work thus helping their students succeed.

7. Fewer non-governmental financial aid opportunities are available for men. If one does an internet search for non-governmental “college financial aid for women,” and compare the response to that for the same search for men one will find many more possibilities for women than men. No matter how it is phrased, there will always be more possibilities for women than for men.

8. Lack of a major war requiring a draft or something similar. Historically, the largest spikes in college enrollments for males occurred after World War II, the Korean Conflict, and the Vietnam Conflict. Even with the recent conflicts, the Gulf Wars,
Afghanistan, and military operations elsewhere in the world, the number of males returning to school has not generated the levels of the historic spikes.

9. An embedded belief on college campuses that “Men are the problem.” Whether from a compensatory fixation of the fears that young men are behaving badly and need to be reprogrammed, “anti-maleness” has become structural on most campuses. Even to the extent that physical and sexual violence towards men are ignored in the presence of that which occurs to women. If one observes the “Take Back the Night” events on campuses to raise awareness about rape and sexual harassment, never does the subject of these occurring toward men as well as women ever come up. One of Shelley’s male freshmen stated in an interview: “I was welcomed to college by being implicated as a potential rapist.”

10. Negative media images of men. If one watches commercials which have interaction between males and females, if there is a depiction of one gender being less intelligent, nearly 100% of the time it will be a male. Amusing yes, but one has to wonder about the cumulative effect of such messaging on boys and young men.

So what can we say so far about these conditions?

1. The trend appears to be increasing. Many commentators are predicting the mid-21st century as the time when men will stop seeking higher education.

2. Once graduated from high school, males are less likely to attend college or university than females.

3. The differences in enrollments between males and females is not defined by ethnicity or socio-economic status.

4. Regional differences do exist in the United States. States that have an economic reliance on agriculture are still showing slightly higher male enrollments than females.

5. The reasons for the change historically are many and require some immediate attention not only in the colleges and universities but also at the primary and secondary education levels, in the communities, and in the family structures.
The effects to geography are many, but reflect that a male dominated discipline needs additional female leadership all the while recognizing the need to encourage more males to continue their education. The greatest source for new majors and minors in geography are currently females and thus recruiting will need to target those individuals. Funding and resources need to be redirected to recognize a need for greater diversity within the discipline. Such efforts could include highlighting women in the field especially in positions of leadership and power. Supporting interest groups which are known to support both females and males. In addition, to the efforts to attract and retain female majors, minors, and leaders, geographers and the community at large need to be cognizant of the need to nurture and recruit male students to the college and university environment and then recruit them into geography.

References


Developing Map Literacy of University Students with the Fieldwork: An Example of Human Geography Course

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The aim of this study is to evaluate and define map literacy level of students in the first year of social sciences education program. And the second aim is tried to develop map literacy of students during 4 weeks in the course of Human Geography two hours per week. Map skills and literacy map interpretation in social sciences course at secondary school-level are highlighted as being important in furthering map literacy, which is required by social sciences student teachers at university. It is need to develop map skills of university students in order to make them active about teaching map literacy to students in secondary school when they become teachers. In this study it was used a ready map literacy scale published in order to define the level of map literacy of students. Then it was organized 4 weeks activities in order to develop different types of map skills on students. Two of activities based on GIS activities to develop map interpretation. Normally it should have spent only 2 weeks to develop map skills of students according to schedule of Geography course. But we extended it in order to develop map literacy of students. At the end of four weeks, interviews and survey were used to determine whether map skills developed after taking the class. Survey were conducted in a pretest, posttest fashion at the beginning and the end of the 4 weeks class. The students were found to deepen their map literacy after taking the class and especially fieldwork.

Map skills revolve around spatial thinking. Without it, students can’t really comprehend the phenomena related to spaces and places around them. As children learn environmental sciences and geography, they develop these important skills. Teaching map skills is one crucial part of the development and education of every student.

Students of today have grown with technology, so understandably, they are quite tech-savvy. Ask them for directions, and they’ll use the GPS on their device to
help you. But give some students big, geographical maps of us – and they’re completely lost.

Technology might make many of the things we did obsolete, but spatial thinking is definitely not one of those things. Reading different types of maps goes beyond merely being able to get from one point to another on a daily basis. By learning how to read maps, students develop spatial reasoning skills that allow them to, literally – take their own place in this world.

Ultimately, when a student develops spatial skills, they gain the capacity to understand the relations between symbols, pictures, objects, visualize them, or understand their relationship and distance. Without any doubt, learning to read a map helps students in building this important skill, the same as an efficient service that helps them build their research and writing skills.

Now that we have acknowledged the importance of mapping skills, here are some of the best ideas for helping students do this.

Compasses and GPS are extremely helpful and everyone should learn to use them. But, before we hand these to students, we need to teach them about maps. So, don’t start a student with a compass. If you have, take it away. Relying on a needle to do all the work in determining spatial relations is not a smart idea. Once the child has a solid understanding of how maps work, they should be taught to use compass and GPS devices.

Whatever is taught, it’s always best to start small. Children need to get used to the idea of reading maps before we hand them a huge map. Thankfully, there are many maps we all have at our disposal, especially now that we have access to technology.

The maps used to teach a young student spatial relations should be kid-size. Then, students can move onto bigger and bigger maps.
A map can hardly be understood if the student doesn’t understand the symbols it contains. They might not understand every symbol they ever see on a map, but there are some basic symbols that everyone should know. Of course, no one can memorize these all at once. Lists have to teach in stages, especially to young learners whose attention span is very short. Unless you want the child to give up because they feel overwhelmed with information, you have to do this gradually.

The first things taught in map reading is how things are showed on maps, such as water, roads, wooded areas, etc. Students should learn the difference between rivers and lakes, study different contour lines, as well as learn what footpaths look like.

There are even games that can help speed this process up and make it more fun for the students, such as map symbol bingo or different map quizzes.

**Purpose of the Present Study**

The aim of this study is to evaluate and define map literacy level of students’ in the first year of social sciences education program. And the second aim is try to develop map literacy of students during 4 weeks in the course of Human Geography two hours per week. Map skills and literacy map interpretation in social sciences course at secondary school- level are highlighted as being important in furthering map literacy, which is required by social sciences student teachers at university.

**Method**

**Sample**

In this section, the research method, study group, data collection tool and its application and the techniques used in data processing and analysis are discussed. This research occurs in a qualitative pattern. Qualitative research can be defined as research in which qualitative data collection methods are used, such as observation, interview and document analysis; and a process is followed for the realistic and holistic presentation of perceptions and events in a natural environment (Yıldırım and Şimşek, 2016, p. 45). Research
data was obtained through document analysis, which is a qualitative research method covering the analysis of written materials containing information about facts and events (Wachter, 2010).

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

**Design**

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

**Results**

Fieldwork is an essential ingredient of geography because it provides a 'real-world' opportunity for students to develop and extend their geographical thinking; it adds value to classroom experiences. ... Good fieldwork encourages geographical enquiry and frequently can lead to higher-order thinking and learning.

It is need to develop map skills of university students in order to make them active about teaching map literacy to students in secondary school when they become teachers. In this study it was used a ready map literacy scale published in order to define the level of map literacy of students. Then it was organized 4 weeks activities in order to develop of different types of map skills on students. Two of activities based on GIS activities to develop map interpretation. Normally it should have spent only 2 weeks to develop map skills of students according to schedule of Geography course. But we extended it in order to develop map literacy of students. At the end of four weeks, interviews and survey were used to determine whether map skills developed after taking the class. Survey were conducted in a pretest, posttest fashion at the beginning and the end of the 4 weeks class. The students were found to deepen their map literacy after taking the class and especially fieldwork.
Discussion

When the right and left lobes of the brain are examined from the neurophysiological point of view, it is possible to say that the right lobe of the brain is more dominant in terms of the concept of map literacy. It indicates the relationships of the right lobe of the brain with pictorial, visual, spatial, creativity, such as holistic, synthesizer, simultaneous, shape, face recognition, and it is emphasized that the functions of rhythm, imagination, colors, size, volume, and music are performed in the right lobe (Nick ve Nick, 2000; Caine, Caine and Cromwell, 1999:32). Another dimension within the scope of visual learning and literacy is the state of nonverbal communication. In this context, visual symbols and actions (body languages) and the use of object language are seen. In other words, non-verbal language is used to describe the communication of people or even objects without using words (İpek, 2003). For visual symbols, we can perceive symbols as a means of communication, information formation, explanation, control, and signs within political cartoons (İpek, 2003). In addition, for the object language, we can think of the use of commands and objects as a symbol in this process (İpek, 2003).

If maps cannot be reduced to a plane consisting of lines and signs in a narrow sense, then reading and writing cannot be reduced to recognizing letters and words. We must go beyond this inflexible understanding of literacy and start looking at it as a relationship between learners’ relationship to the world, that is, the practice of transforming the world that takes place in the most general social environment in which they navigate. In modern societies, the value of the concept of "literacy", which means "being able to read" and "being able to write" in the traditional sense, is undeniable (Freire-Macedo, 1998:25) and maps make it easier to read the world.

Conclusion

If we say this by looking at an old study on map reading, we see that it largely depends on the stages of skill development; map is a skill that develops with learning degree by degree. The map is like a shorthand filled with a pile of geographical information. But the benefit of this depends on the reader’s ability to decipher it and establish a connection
between the symbols. However, this skill is usually not enough for students or adults to see their needs (Shyrock, 1939:181).

It is need to develop map skills of university students in order to make them active about teaching map literacy to students in secondary school when they become teachers. In this study it was used a ready map literacy scale published in order to define the level of map literacy of students. Then it was organized 4 weeks activities in order to develop of different types of map skills on students. Two of activities based on GIS activities to develop map interpretation. Normally it should have spent only 2 weeks to develop map skills of students according to schedule of Geography course. But we extended it in order to develop map literacy of students. At the end of four weeks, interviews and survey were used to determine whether map skills developed after taking the class. Survey were conducted in a pretest, posttest fashion at the beginning and the end of the 4 weeks class. The students were found to deepen their map literacy after taking the class and especially fieldwork.

References


Improving on the Inclusivity of History Textbooks with Environmental History: The Case of The Araucanía Occupation (Chile 1859-1884)

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In Chile, History textbooks have been criticized for not portraying or including indigenous worldviews and history correctly. This can be seen in the treatment of the Chilean occupation of the Araucanía region at the end of the nineteenth century, a territory historically inhabited by the Mapuche people. Intercultural studies have already tackled this problem from political and social points of view, but the environmental historical side of the situation has not been adequately debated. This is noteworthy since nature has been an important actor between the relationship of modern and traditional societies. Thus, the following research has analyzed the History textbooks used by the government in Chilean high schools, from 2008 to 2020, and their inclusion of the relationship between nature, the Mapuche and the Chilean state within the topic of the Chilean occupation of the Araucanía region. A mixed research strategy has been used, with content analysis and textual analysis used for collecting and analyzing data. The sample was comprised by thirteen textbooks. It was found that the natural environment is poorly represented, mainly through prairies and cattle. More importantly, it was found that the environment is, in general, observed from a Western point of view. This means that nature is represented in a dualistic and extractivistic manner. On the contrary, the ecological relationship that Mapuche normally have with the environment is not included. The subdiscipline of environmental history can help to correct this bias by showing the cultural differences that exist in the interaction with nature. This would give us more inclusive history books that would contribute more actively to the search for social peace, since they would address, from a historical perspective, one of the main problems that still exists between the Chilean state and the Mapuche; namely, the misunderstanding of how each society relates with the environment.
The Role of Geography Education in Disaster Risk Reduction: Evidence from Indonesia

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Abstract

Disaster risk reduction has become an important issue for scientists and stakeholders. Because the incidence of disasters tends to increase every year. According to the International Disaster Database (EM-DAT) released in 2018, there were 315 natural disaster events worldwide with 11,804 fatalities and more than 68 million affected in various parts of the world. Most fatalities were caused by earthquakes (45%) followed by floods (24%). The Asian region accounts for 45% of disaster events with the death toll reaching 80%. Globally, Indonesia accounts for almost half of the total death toll. Therefore, serious efforts are needed in disaster risk reduction. Disaster studies must be carried out with a multidisciplinary approach. As a science that examines physical and social aspects, geography has a big role to play in reducing disaster risk. One of the mandates of the Lucerne Declaration on Geographic Education for Sustainable Development in 2007 is the suggestion to integrate the theme of disaster risk reduction into the teaching of geography throughout the world. Therefore, by examining literature and case studies in Indonesia, this article tries to describe the role of geography education in disaster risk reduction. The discussion will begin by explaining specifically the conceptual framework of disaster studies in geography education. The final section of this paper outlines the contribution that geography education can make, especially in preparing future geography education teacher candidates who have comprehensive knowledge about disaster risk reduction so that they can play a role in transferring knowledge to students, the community and society.
Geographical Outdoor Education

Andrea Guaran University of Udine, Italy

Abstract

Background/hypothesis Outdoor education experiences in Italy have become less isolated, especially at nursery level, trying to align the situation of the Italian school with the most advanced European models in terms of educational offer. Today outdoor spaces are identified as the most suitable learning environments. The practice is preceded and accompanied by a theoretical and methodological reflection which refers to the classics of international literature on the theme (Rousseau, Fröbel, Dewey...) and to what has been elaborated more recently by the main schools (Outdoor and Environmental Education, University of Edinburgh, Center for Environmental and Outdoor Education, Linköping University, ...). The research aims to deepen the wide and multidimensional theme related to outdoor education using the lens of spatial-geographic reflection and its theoretical-epistemological assumptions, having as field of investigation the Italian school system.

Materials and methods Direct observation and the interview (in depth) shape the modalities of the research and guarantee the collection of documentation and information data that are essential for the activity of analysis. Results The results of the research provide some clear indications on how open spaces, with a strong natural component, mixed composition and artificial, constitute stages of extraordinary effectiveness to promote the acquisition of the geographical habitus. Conclusion The research supports the importance of different forms of outdoor education, requiring a more widespread and intense application, identifying in particular the values related to spatial and geographical learning. These last ones are understood as fundamental elements for the maturation of a solid and effective territorial citizenship, able to express in everyday life the principles of sustainability and care of natural environments and landscapes.
Preservice Geography Teachers’ Assessment of the Impact of Scaffolds in Problem-Based Learning Activities on Their Learning

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Background With the implementation of PBL in geography education, geography educators have to design, plan and implement scaffolds to guide students in adjusting to the new learning environment and to ensure successful student learning. In this study preservice geography teachers in a B.Ed. programme in South Africa were involved (five weeks) in two PBL activities. Methods This study explores the preservice geography teachers’ assessment of the impact of different hard and soft scaffolds implemented in the PBL activities on their learning. A self-constructed “Scaffolds in geography PBL” questionnaire was developed based on the scaffolds implemented in the PBL activities. The respondents completed the self-constructed questionnaire at the end of the PBL activities. A written comments and feedback section forms part of the questionnaire, where the respondents could elaborate on why specific scaffolds had the most impact on their learning, so as to get a deeper understanding of the quantitative data. Results The respondents rated most of the scaffolds used in the PBL activities to be effective in supporting their learning in PBL. The soft scaffolds were perceived to have slightly higher statistically significant impact on their learning compared to the hard scaffolds. The following scaffolds: “The facilitator provided hints and cues to the different groups” and “The assessment rubrics on how the PBL report will be assessed” received the highest scores from the respondents regarding the impact on their learning. The influence of the respondents’ academic performances in geography and gender on their assessment of the impact of the scaffolds on their learning was also reported in the study. Conclusions The geography preservice teachers revealed the importance of scaffolds in PBL activities. Interestingly, the preservice teachers in this study highlighted the soft scaffolds dealing with the facilitator’s guidance through the PBL activities, to reduce task complexity and promote independent learning.
Teaching and learning sustainable development with fieldwork: A practical example of geography education in Macau

Tat In TAM

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Abstract

Sustainable development has been one of the important themes in geography curriculum in many countries. However, learning the topic on textbooks as a traditional way may be too preservative to response to the challenges that the students may face in the future. Fieldwork is a practical means in geography education which let students to have the opportunity to solve problems in their everyday life through tasks assigned by teachers.

This paper aims to illustrate a practical example of geography education in Macau with the topic of sustainable development through the approach of fieldwork for students in a secondary school. The fieldwork was carried out in 2015 and approximately 100 students participated. The fieldworks aimed to provide opportunities for student to apply certain geographical concepts to solve problems in their everyday lives. Students’ geo-capability as well as their geo-literacy were likely to be strengthened through applying and internalizing knowledges and skills, rather than only solving problems on textbooks or exam papers. With problem-based, solution-oriented tasks, the fieldwork echoes the pedagogical ideas of ‘learning by doing’ and ‘learning from experience’. The results of the fieldworks show that the majority of the students can utilize the concept of sustainable development in finishing the tasks in the fieldworks. The use of skills can be observed and reflected on the accomplishment of worksheets, which also worked as the indicator of the student’s geo-capability and geo-literacy. Several suggestions were raised by the implementers for improvement in the future.

Keywords: Geography Education, Fieldwork, Sustainable development, Macau
Introduction

Sustainable development has become a very important part in the geography curriculum in many countries (Guo et al., 2018), and has drawn more and more concerns from the public in recent years. The most popular definition of sustainable development came from The Brundtland Report that defined the idea as,

‘Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’

(World Commission on Environment and Development, Our Common Future, 1987)

The document ‘Earth Charter’ and the action plan ‘Agenda 21’, and later the ‘Lucerne declaration on geographical education for sustainable development announced’ in 2008, reflect a consensus that action should be taken and educators are responsible to deliver the concepts of sustainable development to the youth (Reinfried, 2009; van der Schee, 2012).

Despite its focus on natural environment, the discussion of sustainable development in high school geography curriculum also touches the realm of social and economic development, and aims to provide students a holistic perspective on decision making by balancing concerns from different stakeholders. However, learning the topic on textbooks as a traditional pedagogy may be too conservative to respond to the challenges that the students may face in the future, while the lack of applying knowledge in situations happened in the real world may reduce the effectiveness of teaching and learning. Therefore, fieldwork may be a practical approach to link ‘knowledge on textbook’ with ‘knowledge in everyday life’, and to nourish geographical understanding by applying geographical knowledge and skills in generating solutions for problems.

Fieldwork, as an approach of field-based education, has been widely used in different disciplines. In geography education, fieldwork is a practical teaching and learning approach which provide opportunities for students to applied geographical knowledge, skills and ways of thinking to solve problems in their everyday life through assigned tasks from teachers (Kent, Gilbertson, & Hunt, 1997).
Extant literatures have already pointed out the importance of fieldwork in geography education. As Smith (1987) suggest that ‘field-based outdoor activity... is a critically important approach to learning’ (p.209) which helps students integrate theoretical concepts with practical skills. Kent et al. (1997) concludes in a literature review that fieldwork provides a holistic perspective of understanding in the process of learning geography. Lambert and Reiss (2016) point out that ‘fieldwork made tremendous difference to learning’ (p.1). Generally speaking, fieldwork facilitates students’ direct understanding to certain geography knowledge through immersing themselves in the environment during the learning process, through discovering the knowledge stored in the environment, and through constructing their own knowledge from what they received on site. The effectiveness of fieldwork in geography education has been widely recognized by scholars and teachers (Fuller, Rawlinson, & Bevan, 2000; Hovorka & Wolf, 2009; Lambert & Reiss, 2016; Remmen & Frøyland, 2014; Yang, Wang, Xu, & Deng, 2014), and this teaching and learning approach can be utilised in various topics, not only in geography education but also in humanity and social studies education (Chang & Ooi, 2008). Fieldwork contributes to teaching and learning (T&L) in following scopes. First of all, it mobilizes students’ motivations in learning. In some cases, fieldwork encourages deeper approaches to learning, and it encourages students’ curiosity in discovering facts from what they have observed, or from what they have collected in the fieldwork site (Kinder, 2018; Phillips, 2012). Fieldwork, as an approach of ‘learning by doing’, helps students link theories in the textbook with the reality, and, perhaps, adjust the conclusion of the over-generalized theories with their observations (Hope, 2009; Winter & Berg, 2007; Yang et al., 2014; Zhang, 1999). More importantly, fieldwork provides students with first-hand, embodied experience within a community when they are observing and investigating in the site and collecting information. Such experience may further create or enhance a sense of place towards the site, simulating the students to concern other issues that they are interested in within the site or the place they lives (Boyle et al., 2007; Foskett, 2002; Marvell & Simm, 2016; Preston, 2016). In addition, fieldwork facilitates students’ social and personal development, encourages students to cooperate with peers in the process, and may further increase students’ independence and confidence through participation.
According to the curriculum in Macau, fieldwork is not compulsory in high school geography education. Very few schools had applied field-based activities in the syllabus and many of these fieldworks were conducted in the way of ‘teacher-led project’ or ‘Cook’s tour’ in the classification of different types of fieldwork by Kent et al. (1997). Hence, a fieldwork which mobilises students’ engagement would be valuable in accumulating experience for local educators to develop teaching plan in the future.

This short article illustrates an example of launching fieldwork in teaching and learning sustainable development in a setting of urban development, particular with the issue of tourism and urban renewal. Qualitative perspective was used in the evaluation of students’ performance in the fieldwork. This article also presents some reflections on the effectiveness of this fieldwork from students’ academic performance, and on the limitations that constrain the design and organization of the fieldwork.

The example of fieldwork that is exemplified in this article was designed and implemented by the author and his colleague in 2015 (Chow & Tam, 2016). This fieldwork was awarded the highest place as ‘Excellent’ by DSEJ, the Education Bureau of Macau, in the Award Scheme in Instructional Design of Academic Year 2014/2015. This is an annual competition of instructional design, and the award of excellent implies that the design of fieldwork is recognised by the judges as a reasonable, innovative, applicable example in both teaching and learning process.

**Background and scenario setting of the fieldwork**

Macau is a city located at the west of the Pearl River Delta on the south-eastern coast of China. Similar to its neighbouring city Hong Kong, Macau also had a colonial history. It was governed by the Portuguese before the Hand-over to China in 1999, and now it is one of the two special administrative regions of China. The colonial past leaves traces on the city’s urban landscapes which contain certain cultural and historical significance.

Macau is a tiny city with a total area of 32.9 square kilometers in 2019. However, the city reaches one of the highest population densities in the world. By the end of 2019 Macau had an estimated population of 679,600, and the average population density was 20,400 per square kilometer. The domestic economy of Macau is highly dependent on tourism, namely
the gambling industry and the related sectors such as resorts, hotels, retails, entertainment, conferences and exhibitions. In the past two decades, Tourism has dramatically developed along with the open-market policy of the gambling industry in 2002 (Sheng & Gu, 2018; Shi, 2017). Scholars suggest that the economy of Macau is highly dependent on its gambling industry, crowned the city ‘Las Vegas of the East’ or ‘The Monte Carlo of the Orient’ (Couto, 2018; F. V. C. Kwan, 2004). The numbers of visitors to Macau are numerous. There were approximately 40 million tourists visited Macau in the year 2019. The huge numbers of visitors and the fast growth of tourism have been drawing public concerns in recent years. The public consultation on sustainability in urban development in Macau, along with a sustainable strategy for the further development in tourism, should be put on agenda.

In Macau, sustainable development and local exploration are among the major themes nominated in the curricular document ‘Basic Academic Attainments’ (BAA) in high school geography education. According to BAA, senior high school students should be able to exemplify sustainable development with particular case studies, illustrate the idea and implementation of sustainable development, and suggest strategies for sustainable development in accordance with Macau’s specific socio-economic circumstances. In the theme of local exploration, students are also required to collect information related to local development and present it in an organized way. Fieldwork, to some extent, may be one of the effective approaches that helps linking the two themes together in a pedagogical practice.

Hence, the designers of this fieldwork combined the teaching of sustainable development and local exploration and delivered the teaching in the form of fieldwork as a response to the curricular document BAA. They chose two neighborhoods in Taipa Island, Macau, as the fieldwork sites. The first neighborhood, named Site A, was the old town center of Taipa Island and has become one of the major tourist attractions in the city. Souvenir shops and restaurants operated along the main street, while grocery stores for local residents were nearly disappeared. Traditional residential buildings remained at the lanes behind the main street, but the over-crowded streets may be a concern for the remaining residents. The second neighborhood, named Site B, was a new-built neighborhood close to Site A in a distance of 500 meters on map. There were multi-storey, high-raised residential
buildings, restaurants, supermarkets, park and nursery service in the neighbourhood. Sometimes tourists might also visit Site B for food and beverage but the numbers of visitors were significantly lesser.

As the contrast between Site A and Site B was apparent, and Site A reflected an urgent concern of development strategy of sustainability on tourism, the designers of this fieldwork believed that the decision of choosing the sites would be appropriate to deliver the message of sustainable development as well as the skills and value in addressing local exploration, in consistence with the aims in the BAA requirements.

**Preparation of the Fieldwork**

Traditionally speaking, geography knowledge taught on lesson, including theories, facts or cases, are ‘dead knowledge’ which may never be experienced by students, or may always be neglected by students in their everyday lives. Along with the ‘dead knowledge’, student may neither practice the geographical skills out of the classroom after geography lessons. The traditional question-response assessment or evaluation system may also prevent students from applying geography knowledge to solve problems in the real world. Hence, the author believes that using fieldwork as an approach in teaching and learning geography may be a good response to the dilemma. In the pedagogical concept of ‘learning by doing’ through fieldwork, the knowledge from textbooks and the knowledge from practice can be transformed into a geography of everyday life, a system of geographical knowledge that students can use as a tool to cope with problem-solving situations. The pedagogical concern of this fieldwork design therefore aims to develop a ‘geography of everyday life’ for students. This does not mean that the ‘textbook geography’ should be replaced. Instead, what is delivering in geography lessons should be developed in to an applicable, practical tool, including a set of knowledge, skills and values, for students to equip themselves in the real world.

This is a problem-solving fieldwork that aimed to upraise students’ enthusiasm of learning and to enhance their ability of utilizing geographical knowledge in everyday life. In preparing the fieldwork, the teachers identified the educational objectives in different domains that should be achieved through the fieldwork. In the cognitive domain, these
objectives included those students should be able to understand the concept of sustainable development, to explain sustainable development with examples, to explain the development of the two selected areas, to identify public concerns in the current developments on the sites, and to provide solutions for the problematic circumstances. Students were expected to develop their observational skills, analytical skills, and personal and decision-making skills through the practice of fieldwork. They were also expected to develop skills in collecting, managing and organizing information, and in presenting the information in appropriate way. In the psychomotor and affective domain, students were encouraged to take responsibility in cooperation, to care the developmental issues in the community, to be subjectively aware related issues in sustainable development, and to internalize the value of sustainable development.

The fieldwork was originally designed and implemented in 2015. There were approximately 100 students from Senior 1 (equivalent to Grade 10 in the UK system) participated in the fieldwork. None of the students had previous experience of fieldwork. Prior to the fieldwork, there were lessons in classroom about sustainable development. However, the students had no chance to know the fieldwork sites or the contents of the fieldwork in advance. This were intentionally decided by the teachers as a means of mobilizing students’ curiosity to the educational activity.

During the fieldwork

On the fieldwork day, all the participated students were divided in groups of three or four. Students were required to listen to a briefing about the codes and guidelines of the fieldwork, the tasks of the fieldwork, and some information about the sites. The teachers believed that announcing certain codes of conduct to all the students would be helpful to eliminate potential disturbance caused by the fieldwork to the residents in the two sites. In addition, the briefing was crucial for both teachers and students to have a clearer understanding about some potential safety issues that may occur during fieldwork. In case of some unexpected, emergency situations, teachers and students were able to call for help or to assemble at the community center.
After the briefing, students were dismissed at the school gate. They were required to go to the sites by a particular time by public transportation. This part of commuting between the school and the sites, in fact, was designed as the first ‘task’ of the fieldwork. By choosing the appropriate routes of bus to reach the site, students were also required to observe and to evaluate the traffic at peak hour.

Students were allowed to stay at the fieldwork sites for three hours until noon for observation and investigation. Each group of students had to report to the teachers twice during the fieldwork and before they left the sites. Students were required to take notes at the sites, and to finish a set of worksheets in a group basis as a means of assessment later in the afternoon. They were allowed to have lunch after the outdoor observation, but were required to reach school at 2pm by public transportation again. Then they had to finish the worksheets and to submit by 5pm. The worksheets were designed into seven major ‘tasks’ with several sets of open questions. Each set of questions designated students into a scenario related to community issues, sustainable development in an urban setting, and sustainable tourism. Students were also required to draw statistic graph and maps to illustrate the information collected from the observation and their analysis. For example, the last task in the worksheets ask the students to propose a development plan for the neighborhood in a holistic perspective. Therefore, they had to make a map to help to visualize their planning, and to propose their ideas by analyzing and synthesizing the materials from fieldwork and literature. Table 1 illustrates two tasks and questions in the worksheet as examples, translated from Chinese to English. The setting of worksheets provides three major advantages here. First, it created a sense of challenge to students which was further driven their curiosity in actively participating in the fieldwork. Second, it acted as a tool of evaluation for examining the outcome of both teaching and learning. Third, it encouraged students to co-operate with their peers to finish the tasks and helped in practicing their social skills.

A well designed fieldwork facilitate the efficiency of teaching and learning (Kinder, 2018). In this fieldwork, worksheets were designed by two teachers, yet on the fieldwork day there were three teachers on the sites to monitor the activity and to ensure the safety of students. However, teachers would not provide any instructions to students on site. Hence,
students have to listen to the briefing carefully and to raise questions before they commuted to the sites. The overall procedure of the fieldwork was similar to the setting of the fieldwork test in iGeo, the International Geography Olympiad, as the teachers who designed this fieldwork were tutors supervising the representatives of team CHINA-MACAU in that international competition.

Table. 1. Examples of tasks designed in the worksheets

<table>
<thead>
<tr>
<th>Task no.</th>
<th>Scenario setting of tasks</th>
<th>Questions or requirements for students</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>The effects of tourism to business in the traditional neighborhood:</td>
<td>6.1 Investigate different types of business along the main streets. Your results should be presented in a table with appropriate classification / categorizations.</td>
</tr>
<tr>
<td></td>
<td>Along with the development of tourism, the types of business have encountered significant changes. In this task you are required to investigate the different types of business operated on the main streets of this neighbourhood.</td>
<td>6.2 Below is a street map of Site 1. Present the results of your investigation in this map in order to reflect the land use of the community. The classification of different types of business should be shown clearly. Tips: use different colors to make your map as informative as possible; remember to name the map and provide suitable legends.</td>
</tr>
<tr>
<td></td>
<td>Answer the questions 6.1, 6.2 and 6.3.</td>
<td>6.3 Challenge for Planning: As you have counted the tourist’s number and investigated the land use, do you think the tourist’s needs are well-fulfilled? What about the needs of the local residents?</td>
</tr>
</tbody>
</table>
According to your investigation, assuming that the Authority is planning to increase shops or public facilities here, what should be added?

Tips: You should consider the needs of different stakeholders including the residents, the tourists and the shop owners that already existed. You may use the concept of sustainable development, central place theory, threshold or range of goods, or other concepts, to support your arguments.

7 The Authority would like to have a plan for the community in order to facilitate its development in the next twenty years. However, there are different concerns from stakeholders, and their voices should be considered in the planning process. This is the last task of the worksheet. Answer the question 7.1. You are encouraged to use every materials or information that you collected during the

7.1 There are different stakeholders concerning about the future of site 1. Their voices can be categorized into 4 groups.

A. Preservationists argue that the site should be well-protected and all the development that would destroy the traditional landscapes should be prohibited.

B. The representatives from the Government wants to totally transform the site into a tourism attraction. This would largely contribute to the growth of local economy. Recent residents will receive considerable compensations for moving out to other residential areas.

C. John, one of the local residents, wants to preserve the original way of living which he loves most, and he doesn’t think that he would be happy if he has to move to elsewhere.
fieldwork to support your response.

D. Mary, another local resident, apprise the plan proposed by the government and is willing to move with compensation. She want to improve the living quality.

You are required to propose a development plan for the entire area of site 1. In your plan all the four different voices aforementioned should be taken into consideration. Please explain you plan in the next page.

You are required to draw a map for the planning on Page 17. Remember to name the map and provide appropriate map elements such as legends.

Discussion

Extant studies suggest that students benefit from fieldwork in different dimensions (Chew, 2008; Lai & Lam, 2013; Lambert & Reiss, 2016; Remmen & Frøyland, 2014). Kinder (2018) suggests that a well-designed fieldwork can provide ‘enjoyment and inspiration for students’, ‘opportunities for developing practical, group work and leadership skills’, and can increase students’ ‘independence, confidence and the ability to deal with risk and uncertainty’ (p.109). According to the fieldwork exemplified in this article, the teachers agreed that it was an innovative approach in geography education which had significant influence on students’ learning process, reflected from the students’ brilliant response on the worksheets and from their performance and attitude on the fieldwork sites. The educational objectives in cognitive, psychomotor and affective domains that were proposed in the fieldwork design had been largely achieved. This section provides several findings from students’ performance and reflections on the overall operation of the fieldwork.
First of all, most of the students were able to present and to explain the concept of sustainable development, and were able to utilise this concept to analyse the issues assigned in the tasks. The responses on the worksheets showed that most of the students were able to link the concept (theory) in textbook with reality, and created effective linkage between textbooks and the real world. Hence, the teachers concluded that the students had effectively engaged in the fieldwork and the submitted worksheets reflected an evidence of ‘Deep Learning’ (Dummer, Cook, Parker, Barrett, & Hull, 2008) in the selected theme of sustainable development. During the fieldwork some students had further discovered other problems or social issues in the community, such as pollution or aging problem, and these issues could be used for further studies. The teachers agreed that, through the approach of fieldwork, students and teachers were more likely to achieve the goal of geocapability (Solem, Lambert, & Sirpa, 2013), and students were more likely to develop a geographical perspective of think which would be good for them to develop skills in critical thinking, to transfer knowledge to more applicable understanding, and to apply concepts and theories in different situations.

In the psychomotor domain, the teachers concluded from the submitted worksheets that most of the students illustrated progress in their mapping skill. One of the tasks required students to collect information about the different types of business alone the main roads in the sites, and to present the results by mapping the information. Another task required students to illustrate a development plan on a map with appropriate scales and legends. Students were able to finish the two tasks and submitted satisfied outcomes. This implies that through fieldwork as an experiential learning student are more likely to practice and to advance the mapping skill, and to apply such skill in certain situations in a problem-solving setting. This also reflects how ‘learning from experience’ is important when students internalize the knowledge and skills by applying them (Sung, 2020). The internalization process comes along with practice and in-person, embodied experiences in fieldwork. In addition, the responses on worksheets suggests that most of the students were able to analyses and present their judgements and arguments through a geographical perspective. This may be considered as an important step of guiding student to ‘think geographically’ and further internalized such way of thinking as their capability in coping with problems. These
findings echo with some scholars’ observations that fieldwork contribute to the development of students’ skills in a practical learning process (Hope, 2009; Hupy, 2011; Yang, Wang, Xu, Wang, & Deng, 2013).

In the affective domain, the teachers observed that most of the students presented higher motivation in the fieldwork than in ordinary classroom activities. The higher motivation of students in learning may result in a better effectiveness in achieving the educational objectives (Boyle et al., 2007). Students were also showing curiosity in discovering the field, working with peers, and solving the challenges assigned in the tasks. In addition, when the fieldwork was designed as an attempt of ‘problem-based’ learning, and the instruction was delivered as ‘student-centered’ rather than ‘teacher-leaded’, the teachers observed that most of the students illustrated a strong agency in directing the progress of the fieldwork by cooperating with others and by actively engaging in observation and investigation. Students were eager to cooperate with their teammates, presented their ideas and developed constructive discussion in finishing the worksheets. This observation also suggests that students were likely to obtain a sense of self-confidence from recognition from peers and teachers by finishing the worksheets with their personally developed response, and were likely to develop their social skills through cooperation with others. Some of the students had shown a particular willingness to aware related issues on sustainable development and other related issues on both of the two sites, which implies that the educational objectives on local exploration was delivered and achieved successfully. These findings also echo with what extant scholars suggest that fieldwork as a teaching and learning approach contribute to the development of students’ affective domain in providing direct learning experiences through practice (Hope, 2009; Preston, 2016; Yang et al., 2013), and further encourage students to be more aware of some related issue after fieldwork (T. Kwan & So, 2008).

Apart from the satisfactory outcomes, there were also some constraints that should be improved. First, the limited time for students to work on the fieldwork sites may affect students’ understanding on certain issues. A meaningful fieldwork that allows students fully discover the sites always takes time (Winter & Berg, 2007). Within a limited working time on site, students were very likely neglecting some information that could help them develop
arguments to respond the assigned questions. Therefore, their judgements on the sites may be incomplete or inaccurate. However, it was also difficult for teachers to extend the time for outdoor activities, as the lesson hours had been regulated by school administration in accordance with the curricular document and the syllabus. Second, a systematic evaluation for the fieldwork should be developed in order to assess students’ overall performance in a more objective, scientific way. Although there was guidance for teachers to follow while checking students’ worksheet, open-ended questions were always difficult for teachers to assess (Han & Foskett, 2007; Winter & Berg, 2007). The evaluation process, to some extent, should reflect how the teachers appreciate students’ effort in participating the fieldwork, and how the teachers examine students’ overall academic performance, which in this sense is the performance of geographical literacy in solving problems in the real world, through the assessment of fieldwork.

**Conclusion**

This paper aims to introduce a practical example of geography education in Macau with the topic of sustainable development, in the means of a fieldwork project based in a local secondary school. Instead of judging the students’ answers with a ‘standard answer’, the instruction was designed as a means to recognize the efforts that students have paid during the fieldwork. Formative and summative evaluation were both taken into account to review students’ achievement.

The fieldworks aimed to enhance the students’ geo-capability as well as their geo-literacy through implementing knowledges and skills in certain situations that they would encounter with in real life, rather than solving problems on textbooks. The results of the fieldworks show that the majority of the students can utilize the concept of sustainable development in finishing the tasks in the fieldworks. With the well-designed, problem-based and solution-orientated tasks, the fieldwork tried to facilitate a new approach of geography education through learning by doing. The results of the fieldworks show that the majority of the students can utilize the concept of sustainable development in finishing the tasks in the fieldworks. The use of skills can be observed and reflected on the accomplishment of worksheets, which also worked as the indicator of the student’s geo-capability and geo-
literacy. This instructional design was considered as a good practical example of teaching sustainable development by fieldwork, yet several suggestions were raised for improvement in the future.

Acknowledgement

The author would like to express his gratitude to Miss Winda Wai Sum Chow, who initially brought up the ideas of this fieldwork, designed and organized the contents of the instruction with the author together, and coordinated the overall process of the fieldwork. He would also like to appreciate the support from the administrative stuff of Pui Ching Middle School in the fieldwork. The fieldwork discussed in this article was awarded ‘Distinction’ in the Award Scheme on Instructional Design by Education and Youth Affairs Bureau of Macau in 2016. The author has no other conflicts of interest to disclose.

Reference


Analysis of Social Studies Course in Terms of Geographical Education According to Learning Styles in the Curriculum

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The aim of this study was to determine what kind of learning style the Geographical Education acquisitions in the social studies course curriculum allow students to learn. As a sample, 6. and 7. classroom social studies course curriculum includes achievements. The learning style provides information about how an individual learns, but also shows at what taxonomical level an individual's learning develops. When we look at learning styles, visual, auditory and kinesthetic learning styles appear. Visual learning involves using things that include demonstrations, movies, pictures, diagrams, that is, what is seen and observed. People with this learning style learn best when information is presented visually and in writing. Auditory learning; auditory learners learn by listening and repeating self-knowledge. These individuals learn best when information is presented verbally. People with kinesthetic learning styles include physical experience, that is, experiences obtained through touch, feeling, holding, making, and practicing. In other words, they learn well when they use and experiment with materials in or outside the classroom environment. When the acquisitions in the social studies course curriculum are examined, the following results appear. There are 34 acquisition expressions in the curriculum of the 6. classroom Social Studies course. And 58% of these acquisitions are addressed to auditory learning style. The acquisitions of 32% were focused on visual learning style. The remaining 10% section was included as acquisitions in accordance with the kinesthetic learning style. In the curriculum of the 7. class Social Studies course, there are 31 achievements. 37% of these acquisitions are auditory, 45% visual, and the remaining 18% call for kinesthetic learning style. The contribution of the social studies course to the meaning of a person's life is undeniably great. From this point of view, strengthening this course in life with kinesthetic learning activities will allow children to learn while having fun.

Keywords: Social studies course curriculum, learning styles, Social Studies course.
Teacher accountability on the learning success of students increased when learning patterns of the students were considered in planning instruction. Data collected at research centers such as the University of Chicago and the University of Wisconsin Research and Development Center for Cognitive Learning suggested that individual learners have their own preferred learning styles and that teachers have some responsibility for gearing up their teaching styles to „fit“ the preferred learning style of each learner (Henson and Borthwick, 2004).

Zeeb”s (2004) research indicated that aligning learning styles of students with teaching styles of instructors could lead to an improvement in academic performance. A compatible learning style with the teaching style of a course instructor enables the students to retain the information much longer, apply it more efficiently and effectively, and have more positive attitude toward the subject that their counterparts who experience teaching/learning styles mismatches (Felder, 1993).

Students often consider social studies to be dull and boring (Chiodo & Byford, 2006). Not only do students perceive social studies to be dull, but they also fail to see the relevance of social studies to their everyday lives. Why is this? Is it because the content is truly dull and boring; or is it because the methods utilized by the teachers do not engage and inspire students to learn social studies? (Schug, Todd and Berry, 1982). Social Science covers diverse concerns of society and includes a wide range of content drawn from disciplines of history, geography, psychology, political science, economics and sociology.

What are the methods of learning social studies?
The methods of teaching and learning Social-Studies include the following:

- **Interview Method:** Here the student gathers information on their own by asking questions
- **Observation or Excursion Method**
- **Expository Method**
- **Discussion Method**
Purpose of the Present Study

The aim of this study was to determine what kind of learning style the Geographical Education acquisitionss in the social studies course curriculum allow students to learn. As a sample, 6. and 7. classroom social studies course curriculum includes achievements. The learning style provides information about how an individual learns, but also shows at what taxonomical level an individual's learning develops. When we look at learning styles, visual, auditory and kinesthetic learning styles appear. Visual learning involves using things that include demonstrations, movies, pictures, diagrams, that is, what is seen and observed.

Method

Sample

In this section, the research method, study group, data collection tool and its application and the techniques used in data processing and analysis are discussed. This research occurs in a qualitative pattern. Qualitative research can be defined as research in which qualitative data collection methods are used, such as observation, interview and document analysis; and a process is followed for the realistic and holistic presentation of perceptions and events in a natural environment (Yıldırım and Şimşek, 2016, p. 45). Research data was obtained through document analysis, which is a qualitative research method covering the analysis of written materials containing information about facts and events (Wachter, 2010).

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

Design

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).
Results

When the acquisitions in the social studies course curriculum are examined, the following results appear. There are 34 acquisition expressions in the curriculum of the 6th classroom Social Studies course. And 58% of these acquisitions are addressed to auditory learning style. The acquisitions of 32% were focused on visual learning style. The remaining 10% section was included as acquisitions in accordance with the kinesthetic learning style. In the curriculum of the 7th class Social Studies course, there are 31 achievements. 37% of these acquisitions are auditory, 45% visual, and the remaining 18% call for kinesthetic learning style. The contribution of the social studies course to the meaning of a person's life is undeniably great. From this point of view, strengthening this course in life with kinesthetic learning activities will allow children to learn while having fun.

Discussion

The contribution of the social studies course to the meaning of a person's life is undeniably great. From this point of view, strengthening this course in life with kinesthetic learning activities will allow children to learn while having fun. The three basic types of learning styles are visual, auditory, and kinesthetic. To learn, we depend on our senses to process the information around us. Most people tend to use one of their senses more than the others. The following will be a discussion of the three most common learning styles.

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Visual – to integrate this learning style into the classroom environment educators need to focus on the following.

- Use graphs, charts, illustrations, or other visual aids.
- Include outlines and handouts for the subject matter.
- Eliminate potential distractions.
• Show diagrams and explain them.
• Leave white space in handouts for note taking.
• Use multiple screens when showing multimedia.
• Benefit from illustrations and presentations that use color.

Auditory - to integrate this learning style into the classroom environment educators need to focus on the following.

• Begin new material with an explanation of what is coming.
• Conclude with a summary of what was taught.
• Include activities like brainstorming or discussion groups.
• Have the learners verbalize the question.
• Acquires knowledge by reading aloud.

Kinesthetic - to integrate this learning style into the classroom environment educators need to focus on the following.

• Use activities that will allow the learners to move.
• Play music during activities.
• Provide highlighters and colored pencils.
• Give frequent stretch breaks.
• Provide a toy to keep their hands busy.
• Enjoy field trips and tasks that involve manipulating materials.

**Conclusion**

The development of activities in accordance with learning styles, making the achievements practice-oriented is of great importance for the curriculum of the social studies course. The
fact that teachers develop their students with practice-oriented activities and process their lessons in this context proves how important the impact of learning styles on education is.

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A Review of Geographical Information Systems Content in The Geography Curriculum Of Pre-Service Student Teachers in South Africa

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Abstract

Geographical information systems (GIS) are one of the technologies widely used at tertiary level. GIS have in recent years, become one of the technologies that have progressed and gained greater significance in education worldwide. It is one of the tools that permit students to discover, examine, and interpret from a spatial point of view. It also help to increase the participation of students during the teaching and learning process, thereby increasing students’ performance in the classroom. Incorporating GIS into geography education and other subjects is thus a fundamental element in the design of the 21st-century education system. This article systematically reviews the availability of GIS content in the geography curriculum of the training of pre-service student teachers at universities in South Africa. The results show that not all teacher-training universities include geography/GIS in faculties of education in South Africa. Instead, students learn geography/GIS in other departments/faculties. This is due to institutional/structural differences. The findings further show that the curricula of most universities that include GIS in geography curricula are designed according to the secondary school GIS concepts. South Africa include GIS content in the Bachelor of Education (BE) in the Senior Phase and Further Education and Training (FET), and not in the BE in the Foundation and Intermediate Phase. A need exists for policymakers and educators to consider the inclusion of GIS content in Foundation and Intermediate Phase. This study also recommend inclusion of GIS in all core subjects in teacher education and allowed academicians to incorporate different content and improve the curriculum or course design while working as a team.
Synergies between geographical thinking, citizen training and virtual education, for the understanding-management of problems of the society-territory complex

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Progress and partial results of a continuous process of migration and updating of educational contents and practices are shown, which enrich the management of teaching-learning processes of geographical thinking in higher education. Ideas also constitute axes of work in the process of constructing the idea of research as a doctoral student in geography.

Geographic thinking supported by virtual education is a powerful tool to navigate the world. It can positively shape human culture (conceived as adaptation). It can guide the formation and exercise of citizenship, which claims spatiality, synthesis, heuristics and critical thinking, for analysis, management and hermeneutics, regarding uncertainties arising from the society-territory complex.

Three moments of the experience/process: First, an analytical dismantling of fundamental concepts, categories and structures of geographical science, to propose new couplings and assemblies for geographical thinking. Second, the examinations and discussion on the relevance, opportunities and variants to consider in geographic literacy for its application in citizen training and the analysis of socio-spatial problems. Finally, the review and application with critical sense of some of the most representative techniques, methodologies, technologies and strategies of practical and applied work in geography (e.g. field work, chromatic, social cartography, representation, display-visualization, systematization, analysis, geoprocessing).

Partial results taking into account the positioning of virtual education towards the future: Virtual learning environments, activities and resources such as databases, questionnaires, surveys, forums, glossaries, games (designed in Ardora and Hotpotatoes), virtual learning objects (exelearning) and activities designed under scorn standards. A continuous review
and vindication of the important role of information, management and appropriation of geographic knowledge for interpretive readings of the territory in context is highlighted.

Keywords: Geographical thinking, virtual education, citizenship, society, territory

The academic and institutional context

The experience is related to teaching and formative research for more than 15 years in two courses: Physical and Human Geography and Spatial and Territorial Thinking. These courses are mainly addressed to students of Cadastral and Geodesy of the Faculty of Engineering in the Universidad Distrital Francisco José de Caldas, this is the public university belonging to the city of Bogotá in Colombia. It can be said that Cadastral and Geodesy is the engineering programme, with the greatest social projection in the country. The elective course called Spatial and Territorial Thinking, was offered for the first time in 2018. In this course, the categories space and territory are studied.

Since then, it has been gratifying to see that the territorial theme is also appealing to students from other curricular programs, for example the engineering: Electronic, Electrical, Industrial and informatics, as well as, some bachelors: for example: Social Sciences, Biology and Education.

The author of this work is currently studying a PhD in Education, developing the research proposal called “Cultural Artefacts And Pedagogical Mediations In Fieldwork For The Development Of Territorial Knowledge And Integral Education Of Engineers”¹. In short, the intention is to review and propose pedagogical adjustments to the teaching-learning of spatial-territorial issues with engineering students; being a Doctor of Education has also for the author a lot to do, with personal and philosophical convictions. The process is conceived as a transcendence from being an instructor to becoming a master.

In an inspiring idea from Francisco José de Caldas, the man who is considered the father of Colombian geography, ever said: “Geographical knowledge is the thermometer by which the enlightenment, commerce, agriculture and prosperity of a people are measured. Their stupidity and barbarism are always proportional to their ignorance on this point”

¹ [https://die.udistrital.edu.co/comunidad/carlos_hernan_castro_ortega](https://die.udistrital.edu.co/comunidad/carlos_hernan_castro_ortega)
According to this idea, it is considered that geographical thinking and knowledge of the territory can become a fundamental basis for the formation of better engineers, citizens and what is most important: good people.

The territorial domain for the teaching and learning with some engineers

Nowadays, the main fields of study of Cadastral and Geodesy Engineering are: Multi-purpose Cadastre, Geomatics, Geodesy and land administration and management. These large fields allow the generation of geographic information for the knowledge of the territory.

In this order of ideas, a relevant question is ¿where do these guidelines come from?. Then it is possible to mention that six years ago, the mission statement for the program was updated as follows:

“The comprehensive training of proactive and socially committed engineers; with a critical spirit, analytical, global and argumentative thinking; competent for the generation, administration and management of geographic information oriented mainly towards knowledge of the territory; its planning and management with criteria of equity, sustainability; using cutting-edge techniques and geotechnologies”

According to the above, this engineer must be competent for Generation, administration and management of geographic information, but the true change can be seen, in the social commitment, the critical spirit and in the argumentative thinking.

In different courses, synergies have been built based on contents and strategies such as: The recognition, contextualization and interrelation of elements on science, philosophical foundations, research and knowledge. Geographic knowledge as an inter and transdisciplinary knowledge. Transcending from elementary geographical concepts (e.g. location, distance, time) to more complex ones (e.g. hierarchy, pattern, organization). The search to balance the heuristic approach with critical thinking and hermeneutics. A rescue for practical work (Hope, 2009; Kent et al., 1997), modeling, generalization processes and representation of space (Chorley & Haggett, 1967; Haggett, 1988; Haggett & Obiols, 1976); as important knowledge with scientific background, beyond its mere use and

\[ \text{http://ly/a7sH} \]
operationalization with geotechnologies. An example worth mentioning has to do with the research methodology seminars, where the professors who guide them have postgraduate training in Geography, research experience and active participation in research lines and research groups.

The structuring concepts and categories around which it has been possible to configure and articulate contents and strategies mainly gather: The concept and nature of space (Ackerman, 1976; Dollfus, 1976; Santos, 2000); The subject matter, abilities, spatial skills, spatial thinking and reasoning (Albert & Golledge, 1999; Bednarz et al., 1994; R. Golledge, 2016; R. G. Golledge, 2002; Kastens & Ishikawa, 2006; Newcombe & Shipley, 2012); The importance of spatial teaching and its connections with citizen training (Araya, 2013; Stoltman, 1990); Practical work, resources, techniques and methods related to spatial and territorial issues (e.g. Dollfus, 1978; Flórez & Thomas, 1993; Gersmehl & Brown, 1992; Haggett & Obiols, 1976); Research, complexity, methodological diversity, inter and transdisciplinarity (Enos, 2019; e.g. Gómez & Jones III, 2010; McKendrick, 1999; O’Sullivan, 2004; Philip, 1998; Ruddell & Wentz, 2009); The perspectives and challenges of the discipline and spatial and territorial knowledge; The territory in relation to other aspects: cultural, economic, political, technical and systematic (Bozzano, 2009; Cuervo González, 2003; Cuervo, 2006; Giménez, 2000); finally what concerns the teaching of spatial and territorial issues in engineering (C. Castro_Ortega, 2017; C. H. Castro_Ortega, 2015, 2016).

**Some historical background on Colombia**

To provide a better context on what we are talking about, can be done in a brief review of some background information on Colombia. Like many other countries, Colombia experienced different periods in the past: conquest, colony, and independence. Independence from Spain was achieved in 1819. The most significant periods can be summarized as follows: Indigenous Period during 19000 b.c. - 1499 a.d., Spanish Conquest from 1499 to 1550, Spanish Colony from 1550 to 1810, Independence from Spain from 1810 to 1819 and Republican period 1819 onwards.

Since the beginning of the 20th century, issues like political parties, divisions and territorial disputes and industrialization have become more complex (Guzmán et al., 2019). The
urbanization was accelerated from mid-20th century (Jaramillo & Cuervo, 1985; Zambrano & Bernard, 1993), and approximately 60 years ago, the country became urban and the main trigger was violence. In a few words, it can be stated that the country has been an independent republic for just over 200 years. The main socio-territorial problems of Colombia arose and developed from the second half of the 20th century; this means: paramilitaries, drug cartels, narco-terrorism and forced displacement. However, it should be noted that despite the difficulties, Colombia has very valuable things, for example: biodiversity, natural and cultural heritage, great athletes, and resilient, hard-working and friendly people.

**An approach to new forms and strategies to know the territory from engineering students**

Consequently, and considering the globalized, changing and uncertain world that we live in, it is possible to wonder if it is still congruent, develop teaching and learning processes for these engineers, emphasizing mainly on the instrumental and technological application issues? The answer is not, because the Cadastral and Geodesy engineering is closely related to strategic issues for the territorial knowledge and development of Colombia: the regularization and formalization of property, land restitution, the implementation of the La Habana Cuba peace accords, and more recently the multi-purpose cadaster.

In this context it has been proposed some contents and working strategies, for teaching and research with a territorial geographical approach:

1. The tools must be at the service of rational, critical and engineering thought processes; it cannot be that students and teachers continue to be subordinate to tools and technologies.

2. The examination of the forms, structures and dynamics of spatial organisation of territories, are tasks that precede interventions by means of administrative and planning instruments.

3. We are getting used to articulating philosophical and thought foundations, research, geography and engineering.
4. We are interested in achieving a balance between: the usual heuristic approach to engineering, reflective and critical thinking, and hermeneutics.

5. We want to motivate and rethink the practical work, the systematic thinking and observation, fieldwork and spatial representations. Those are issues that must go beyond the mere use of geo-technological tools.

6. When studying the territory, approaches such as the phenomenological, qualitative and ethnographic are not incompatible with some methods and objectives of work in engineering.

The purpose is then, to bring the objectivity of spatial configurations into the subjectivity, relativity and complexity of territorial configurations (figure 1).

![Figure 1](image.png)

Figure 1. Graphic significance of the transcending between the spatial and the territorial.
Source: modified from Nación et al., (2016) and (Sánchez, 2004)

Some of the different resources and activities that constitute the pedagogical mediations implemented since 2016 include: Classrooms in moodle, questionnaires, Wikis, VLO-virtual learning objects, surveys, forums, glossaries, scorm activities, gamification (Ardora, Hot Potatoes) and use of free and open-source reference management software to manage bibliographic data and related research materials, for instance Zotero and Mendeley. It is important to mention that the process of virtualization of the courses had started before the beginning of the covid 19 pandemic, at the end of 2016.
Some satisfactory didactic and pedagogical results, are for example:

1. Formative and not only summative evaluations

2. Students are encouraged to develop critical reviews and states of the art by means of literature reviews; those are essential steps in constructing theoretical frameworks and formulating research ideas.

3. Some models, prototypes and technological artefacts, that often result from engineering work, are transformed into research projects.

4. Workshops have been proposed. The students themselves participate in their evaluation with the help of previously designed and agreed rubrics.

5. Thanks to the hotbeds, students are linked to university research structures, fostering leadership processes, teamwork, research and other competencies that are required by today's engineers.

By way of conclusion, because it's worth sharing

Finally, it can be pointed out that the articulation of the different aspects mentioned above (philosophy, research, geography and engineering) seeks to contribute to an integral approach in the formation of future engineers, by constructing and deconstructing categories, processes and strategies that pursue the development and management of territorial knowledge, within the framework of citizen practices with a planetary conscience.

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How Apt is the Geography Curriculum to Which Learning Styles of Students?

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The aim of this study is to investigate how the attainments in the geography course curriculum are predisposed to which of the learning styles of the students. As a sample, the attainments in the ninth and tenth grade geography course curriculum were discussed. Learning styles are divided into three as visual, auditory and kinesthetic learning styles. Visual learning involves using things that include demonstrations, movies, pictures, diagrams, what is seen and observed. People with this learning style learn best when information is presented visually and in writing. Auditory learning; auditory learners learn by listening and repeating self-knowledge. These individuals learn best when information is presented verbally. People with kinesthetic learning styles include physical experience, that is, experiences obtained through touch, feeling, holding, making, and practicing. In other words, they learn well when they use and experiment with materials in or outside the classroom environment. The attainments in the geography course curriculum were analyzed through document review. According to the findings, there are 22 attainments in the curriculum of the 9. classroom geography course. 60% of these attainments are addressed to auditory learning style. The remaining 25% are focused on visual learning style. About 15% of the cross-section is the attainments appropriate to the kinesthetic learning style. There are 34 attainments in the curriculum of the 10. classroom geography course. 50% of these attainments are auditory, 40% are visual, and the remaining 10% are called kinesthetic learning styles. Life as a geography lesson to take part in a natural motion for you to find application in the field, even very simple because of the nature of this course overlaps with kinesthetic learning style, but more of the attainments in auditory and visual learning style based on the program, this course hampers the development of the size of the application.
Students acquire information by observing, talking to others and viewing, reading and/or listening to texts. They use geographical tools and communicate geographical information in a range of forms. Students reflect on their learning from the findings of their inquiry.

An effective curriculum provides teachers, students, administrators and community stakeholders with a measurable plan and structure for delivering a quality education. The curriculum identifies the learning outcomes, standards and core competencies that students must demonstrate before advancing to the next level.

This model identifies four types of learners: visual, auditory, kinesthetic, and reading/writing. Most people are a combination of these four styles, but more times than not, they have a predominant style of learning. Each of these styles has a complementary way of teaching Geography develops children's understanding of the environment, the natural world, modified landscapes and the social environment. Geography provides children with a vocabulary to describe the features of the environment and the processes that shape it.

Positive Relationships are more likely to form when the curriculum is designed to facilitate personal interactions between students and between students and faculty. ... Such experiences enhance a student's sense of belonging, as well as experiences of autonomy and competence.

People with this learning style learn best when information is presented visually and in writing. Auditory learning: auditory learners learn by listening and repeating self-knowledge. These individuals learn best when information is presented verbally. People with kinesthetic learning styles include physical experience, that is, experiences obtained through touch, feeling, holding, making, and practicing. In other words, they learn well when they use and experiment with materials in or outside the classroom environment. The attainments in the geography course curriculum were analyzed through document review. According to the findings, there are 22 attainments in the curriculum of the 9th classroom geography course. 60% of these attainments are addressed to auditory learning style. The remaining 25% are focused on visual learning style. About 15% of the cross-section is the attainments
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A learning style is not in itself an ability but rather a preferred way of using one’s abilities (Sternberg 1994). Individuals have different learning styles, that is, they differ in their ‘natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills’ (Reid 1995). Learning styles are typically bipolar entities (for example reflective versus impulsive, random versus sequential), representing two extremes of a wide continuum; however, where a learner falls on the continuum is value neutral because each extreme has its own potential advantages and disadvantages (Dörnyei 2005). Moreover, although individuals may have some strong style preferences and tendencies, learning styles are not fixed modes of behavior, and, based on different situations and tasks, styles can be extended and modified (Reid 1987; Oxford 2011). However, the extent to which individuals can extend or shift their styles to suit a particular situation varies (Ehrman 1996).

Ways of learning: A closer look at 4 learning styles

Ellis (2008), Learning styles and preferences take on a variety of forms and not all people fit neatly into one category. But generally speaking, these are the most common types of learners:

1. **Visual learners**

   How to recognize visual learners in your class: Someone with a preference for visual learning is partial to seeing and observing things, including pictures, diagrams, written directions and more. This is also referred to as the “spatial” learning style. Students who learn through sight understand information better when it’s presented in a visual way. These are your doodling students, your list makers and your students who take notes (Ellis, 2008).
How to cater to visual learners: The whiteboard or smartboard is your best friend when teaching these types of learners. Give students opportunities to draw pictures and diagrams on the board, or ask students to doodle examples based on the topic they’re learning. Teachers catering to visual learners should regularly make handouts and use presentations. Visual learners may also need more time to process material, as they observe the visual cues before them. So be sure to give students a little time and space to absorb the information (Ellis, 2008).

2. Auditory learners

How to recognize auditory learners in your class: Auditory learners tend to learn better when the subject matter is reinforced by sound. These students would much rather listen to a lecture than read written notes, and they often use their own voices to reinforce new concepts and ideas. These types of learners prefer reading out loud to themselves. They aren’t afraid to speak up in class and are great at verbally explaining things. Additionally, they may be slower at reading and may often repeat things a teacher tells them (Oxford, 2011).

How to cater to auditory learners: Since these students generally find it hard to stay quiet for long periods of time, get your auditory learners involved in the lecture by asking them to repeat new concepts back to you. Ask questions and let them answer. Invoke group discussions so your auditory and verbal processors can properly take in and understand the information they’re being presented with. Watching videos and using music or audiotapes are also helpful ways of learning for this group (Oxford, 2011).

3. Kinesthetic learners

How to recognize kinesthetic learners in your class: Kinesthetic learners, sometimes called tactile learners, learn through experiencing or doing things. They like to get involved by acting out events or using their hands to touch and handle in order to understand concepts. These types of learners might struggle to sit still and often excel at sports or like to dance. They may need to take more frequent breaks when studying (Griffiths, 2012).
How to cater to kinesthetic learners: The best way teachers can help these students learn is by getting them moving. Instruct students to act out a certain scene from a book or a lesson you’re teaching. Also try encouraging these students by incorporating movement into lessons: pacing to help memorize, learning games that involve moving around the classroom or having students write on the whiteboard as part of an activity.

Once kinesthetic learners can physically sense what they’re studying, abstract ideas and difficult concepts become easier to understand (Griffiths, 2012).

4. Reading/writing learners

How to recognize reading/writing learners in your class: According to the VARK Modalities theory developed by Fleming and Mills in 1992, reading/writing learners prefer to learn through written words. While there is some overlap with visual learning, these types of learners are drawn to expression through writing, reading articles or books, writing in diaries, looking up words in the dictionary and searching the internet for just about everything (Oxford, 2011).

How to cater to reading/writing learners: Of the four learning styles, this is probably the easiest to cater to since much of the traditional educational system tends to center on writing essays, doing research and reading books. Be mindful about allowing plenty of time for these students to absorb information through the written word, and give them opportunities to get their ideas out on paper as well (Oxford, 2011).

Purpose of the Present Study

The aim of this study is to investigate how the attainments in the geography course curriculum are predisposed to which of the learning styles of the students. As a sample, the attainments in the ninth and tenth grade geography course curriculum were discussed. Learning styles are divided into three as visual, auditory and kinesthetic learning styles.
Visual learning involves using things that include demonstrations, movies, pictures, diagrams, what is seen and observed.

**Method**

**Sample**

In this section, the research method, study group, data collection tool and its application and the techniques used in data processing and analysis are discussed. This research occurs in a qualitative pattern. Qualitative research can be defined as research in which qualitative data collection methods are used, such as observation, interview and document analysis; and a process is followed for the realistic and holistic presentation of perceptions and events in a natural environment (Yıldırım and Şimşek, 2016, p. 45). Research data was obtained through document analysis, which is a qualitative research method covering the analysis of written materials containing information about facts and events (Wachter, 2010).

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

**Design**

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

**Results**

People with this learning style learn best when information is presented visually and in writing. Auditory learning; auditory learners learn by listening and repeating self-knowledge. These individuals learn best when information is presented verbally. People with kinesthetic learning styles include physical experience, that is, experiences obtained through touch, feeling, holding, making, and practicing. In other words, they learn well when they use
and experiment with materials in or outside the classroom environment. The attainments in the geography course curriculum were analyzed through document review. According to the findings, there are 22 attainments in the curriculum of the 9. classroom geography course. 60% of these attainments are addressed to auditory learning style. The remaining 25% are focused on visual learning style. About 15% of the cross-section is the attainments appropriate to the kinesthetic learning style. There are 34 attainments in the curriculum of the 10. classroom geography course. 50% of these attainments are auditory, 40% are visual, and the remaining 10% are called kinesthetic learning styles. Life as a geography lesson to take part in a natural motion for you to find application in the field, even very simple because of the nature of this course overlaps with kinesthetic learning style, but more of the attainments in auditory and visual learning style based on the program, this course hampers the development of the size of the application.

Discussion

It is interesting to speculate as to whether school students choose university courses to match their skills and comfort zone. Lynch et al. (1998), surveying medical students, found divergers to be just 8 per cent of the class and cites other studies of medical students with low diverger rates. This suggests medical students self-select as people who are happiest when presented with sound theories to consider (assimilators), and the practical application of concepts and theories (convergers) and are least happy when offered the chance to observe and gather research from a broad range of areas (divergers). Geography can be thought of as offering a broad, general education covering a breadth of academic materials combined with hands on field and laboratory studies.

Despite these caveats, making learning styles explicit is a useful change agent. Smith (2002) argues that an important benefit of using Kolb with classes is in raising student awareness of their own position. In working with groups, it is our experience that students who have this awareness are better prepared to appreciate the different approaches of others, are better able to understand why some people appear to be more comfortable and capable in particular roles and can appreciate why some tasks appear more difficult and need more time. Being aware of one’s learning strengths ‘should not be seen as a remedial or
compensatory issue’ (Smith 2002, 69). It is about helping students to be more aware of their strengths and approaches and therefore to become more independent learners. A student who is made aware of the Kolb cycle’s implications of different activities may be encouraged to make an additional effort in areas which previously he or she has found difficult or simply dismissed as ‘not for me’. A similar argument points to the need for staff to be aware of their teaching styles and be sensitive to the varying needs of students taking their courses. Such explicit recognition of ‘difference’ fits well with the trend towards individualization of learning in higher education and the recognition of the ‘other’ in geographical research.

Conclusion

Our original research questions involved exploring whether the views of Cullen et al. (1994) or Kolb (1984) on the predominant learning styles of geographers was the more accurate, and investigating whether learning styles varied internationally. The results show unequivocally that in all four countries examined, assimilators are the dominant group. There are international differences, but these are of a second order and mainly reflect the difference in proportion of students in the UK and the US whose predominant learning styles are divergers. In Australia and New Zealand there are significant intranational variations between the universities studied.

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Impressions And Beliefs on Landscapes: Development of an Innovative and Integrated Learning Methodology for Secondary School Education

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according to the European landscape convention (council of Europe, 2000)
“landscape” means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. Focusing on the territory as a whole, not distinguishing between the urban, peri-urban, rural and natural parts, landscapes are not limited to cultural, artificial and natural elements. This concept expresses the theme of the quality of the surroundings where people live. Taking into account the above definition, it is interesting to analyze what are young students’ and secondary school teachers’ beliefs, impressions and perceptions on landscapes. The presentation will focus on students’ and teachers’ attitudes and existing knowledge on landscapes, water surfaces and other global environmental issues. Furthermore, the role of landscape in formal education will also be examined. How is it possible to develop an innovative and integrated learning methodology, focusing on the European landscape and the role of water in shaping it? Empirical data was collected through a questionnaire survey among secondary education teachers and students, as well as specific stakeholder organizations in four involved countries: Greece, Hungary, Italy and Turkey. the online questionnaires were available from May to June 2020, and they were completed altogether by 515 respondents. the presentation will address the main findings of the survey, focusing on the impression and perception of landscapes. differences and similarities among participating countries will be highlighted, however, aggregated data was also analyzed, in order to measure current and general tendencies. the survey was carried out in the frame of the Erasmus+ water steam project (“landscape, water and active citizenship: a nature-based steam teaching methodology”)

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The Roles of The University and Academics in Meeting the Goals and Needs of Society

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Challenges related to the environment, economics, culture and human relationships are increasingly threatening our societies. To cope with these challenges the UN has proposed Sustainable Development Goals. Moving towards these goals requires cooperation from many different groups in society, and universities play a major role here. Coping with these global issues requires understanding of their roots, connections, potential solutions, and responsibilities. The coping is more difficult since the solutions for global challenges are basing on local actions and results are often unnoticeable and also unpredictable and they are therefore considered to have minor importance. The role of higher education is to explain and describe the global processes in systemic way. New knowledge and innovation born at universities creates an environment of development for students that enables them to take responsibility for their own wellbeing and also create added value for society in the future. The current presentation discusses how societal needs and sustainable development are integrated into the teaching practices of academics at one Estonian university. Analysing the strategic documents that state the role of universities and the relationship between universities and society and interviews with academics, we can argue that the aims of the university as influential in society may not coincide with its teaching approaches and the aims of academics as individuals. Most academics see their role only in terms of teaching general competences and the specific knowledge of their field. Only a few academics mentioned the needs of society in the context of their teaching and bringing relevant topics into the classroom. Better communication at the university about its mission is needed to make global challenges meaningful for students, help them to make their personal behavior more environmentally friendly, raising awareness and developing the general competencies they need to act locally.
The South African National Geography Olympiad: A Growing Online Olympiad Milton Milaras the University of South Africa

Tracey McKay

The University of South Africa

Background In 2016, the Society of South African Geographers (SSAG) launched a nationwide online secondary school Geography Olympiad (South African National Geography Olympiad (SANGO)). SANGO aims to foster a love of Geography and grow the discipline in secondary schools, and in the long-term capacitate sending a team to the International Geography Olympiad. This paper details the advantages, challenges and learnings of running an entirely online Olympiad. SANGO comprises of 40 Multiple Choice Questions with graphics, and covers the entire Geography curriculum. Additionally, learners are asked 5 feedback questions. Top 1% (platinum), 5% (Gold), 10% (Silver), 15% (Bronze) and ‘Participation’ e-certificates are emailed to learners and teachers.

Materials and Methods The 2017 SANGO used Google Forms and received overwhelmingly positive feedback from participants. 946 students from 60 schools across seven provinces took part. Challenges included fraudulent participation and a Google bug. To overcome these issues, a professional IT company was appointed in 2018. The 2018 SANGO had 1144 learners from 55 schools. Unfortunately, the 2018 WordPress-based IT platform catastrophically failed due to server load issues, resulting in significant data loss. Thus, in 2019 a custom-made IT platform was commissioned. In 2019 1535 learners from 72 schools took part. The 2019 Olympiad ran excellently with no load issues, but some dishonesty was noted. For 2020, anti-cheating measures will be implemented.

Results and conclusion The necessity for ongoing IT development aside, SANGO was not able to generate sufficient funds to cover costs, making external funding essential. We are grateful to the SSAG and Royal Geography Society (RSG) for funding assistance. We are also hopeful that in 2020/1 we will receive financial support from the South African government and the IGU.
Development of Map Skills of Students with Orienteering Social Studies Course in Secondary School

Prof. Dr. Eyüp Artvinli

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It is aimed to provide students with the skills of research, environmental literacy, perception of change and continuity, observation, map literacy and location perception through the learning area “People, Places and Environments” at all grade levels where the Social Studies course is taught in Turkey. Map literacy, which is one of the skills that the social studies course aims to provide in secondary school, is one of the skills that can be best developed in the fourth, fifth and sixth grade attainment of people, places and environments learning area. In this study the orienteering game has been used to improve the map literacy skills of the grade students 6. Grade of social studies. After it was determined that the total of 4 attainments in the People, Places and environments learning area of this class were suitable for improving map literacy, the orienteering game was played for 2 weeks and a test measuring map skills was applied to the students. Before the orienteering game, there is a significant difference between the test results before and after playing orienteering according to the result compared to the same test results. This difference is less in female students than in male students. According to this result, map literacy skills are developed more permanently if students complete a process that they have learned by doing and living, as well as psycho-motor skills such as orienteering in addition to theoretical activities and course processing in class. For this purpose, in order to develop the same skills in different class groups in a more permanent way, it is recommended that teachers practice by developing examples of orienteering applications suitable for student levels.
Map Skills for the social studies curriculum takes a grade-by-grade approach to teaching students how to interpret and learn from maps and globes, a fundamental content theme found in nearly every state's academic standard. Researchers from a variety of fields have explored map learning. Geographers, social studies educators, and psychologists have studied how people use maps to organize information and find their way. They have also studied how people create and use mental images, termed “mental maps,” to understand their environments and to organize their knowledge of places. The results of this research should be integrated into curricula and textbooks and understood by teachers in order to improve students’ map learning and spatial thinking.

First, even the youngest students possess significant spatial skills, and they can be taught to read and interpret maps and images. Although many parents and teachers are skeptical about the ability of young children to understand and use maps, even elementary school students can use maps effectively. Research shows that young children are surprisingly adept at using maps (and remotely sensed images) to find locations and trace their paths to and from familiar destinations (Boardman, 1996). Second, children can use maps for more than way-finding. They are able to understand and use symbols and patterns represented by color or shading (Blaut, 1997).

A few studies suggest that simple maps can be understood by children even without formal instruction. Some have interpreted these results to mean that certain spatial abilities are innate and that we need not wait until children progress to later developmental stages to introduce them to maps and other spatial representations (Olson, 2003).

Third, this ‘intuitive’ map learning seems to level off; that is, without formal instruction, students’ map learning plateaus. After all, map interpretation is a complex, multi-stepped cognitive process. One problem is that children and adults cling to a variety of misconceptions about maps and map use (Morgan and Lambert, 2005).

A second recommendation of the National Geography Standards was that students should use maps produced with new technologies such as GIS and remote sensing. Maps displaying satellite imagery (e.g., Google Earth) are widely available now and becoming very
popular; it was considered important, even in 1994, that students expand their map interpretation skills to include digital maps and images. Although the standards did not suggest integration of GIS into K-12 education, its growing importance was highlighted in an appendix. A more recent National Academy of Science study explores the role of GIS in supporting spatial thinking (Wiegand, 2005).

**Purpose of the Present Study**

It is aimed to provide students with the skills of research, environmental literacy, perception of change and continuity, observation, map literacy and location perception through the learning area “People, Places and Environments” at all grade levels where the Social Studies course is taught in Turkey.

**Method**

**Sample**

In this section, the research method, study group, data collection tool and its application and the techniques used in data processing and analysis are discussed. This research occurs in a qualitative pattern. Qualitative research can be defined as research in which qualitative data collection methods are used, such as observation, interview and document analysis; and a process is followed for the realistic and holistic presentation of perceptions and events in a natural environment (Yıldırım and Şimşek, 2016, p. 45). Research data was obtained through document analysis, which is a qualitative research method covering the analysis of written materials containing information about facts and events (Wachter, 2010).

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).
Design

In this study, research data was collected by document analysis technique and the data was analyzed by content analysis. Content analysis is defined as "the systematic reading of a body of texts, images, and symbolic matter, not necessarily from an author's or user's perspective" (Wachter, 2010).

Results

Map literacy, which is one of the skills that the social studies course aims to provide in secondary school, is one of the skills that can be best developed in the fourth, fifth and sixth grade attainment of people, places and environments learning area. In this study the orienteering game has been used to improve the map literacy skills of the grade students 6. Grade of social studies. After it was determined that the total of 4 attainments in the People, Places and environments learning area of this class were suitable for improving map literacy, the orienteering game was played for 2 weeks and a test measuring map skills was applied to the students. Before the orienteering game, there is a significant difference between the test results before and after playing orienteering according to the result compared to the same test results. This difference is less in female students than in male students. According to this result, map literacy skills are developed more permanently if students complete a process that they have learned by doing and living, as well as psycho-motor skills such as orienteering in addition to theoretical activities and course processing in class. For this purpose, in order to develop the same skills in different class groups in a more permanent way, it is recommended that teachers practice by developing examples of orienteering applications suitable for student levels. Teaching with maps means using maps to help students learn key social studies concepts and relationships. Teaching with maps enables students to learn through maps that is, to think spatially in various reasoning and problem-solving contexts in the classroom and real world.

Conclusion

Social studies skills are vital to a student’s success. The ability to read maps, categorize information, analyze artifacts and primary resources, compare and contrast ideas,
summarize main ideas, and interpret historical documents are all skills they need to master more difficult content in secondary school.

References


Applicability of the Acquisitions in the 2018 Geography Course Curriculum in Terms of Geographic Information Systems

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The aim of this research was to analyze the applicability of the acquisitions in the 2018 geography course curriculum in terms of geographic information systems. The availability of geographic information systems in geographical education is of great importance for the content and evaluation of the objectives of the geography course. Looking at the geography curriculum, it was determined that the program was based on the ability of geographical inquiry. Creative thinking skills, problem solving skills, decision making skills, as well as the skills of using information technologies are also among the skills that the program brings. But what increases the importance of actual research is the ability to use evidence with map skills, observation skills, land work skills, geographical inquiry skills, ability to prepare and interpret tables, graphs and diagrams, ability to perceive time, ability to perceive change and continuity. The main mechanism of this research is the applicability of these skills in terms of geographic information systems. A GIS-supported geographical education will reflect the existence of the capacity to increase the functionality of the course. Geography lesson in the curriculum the acquisitions for the year 2018 are evaluated in terms of geographical skills when these skills to work in the field especially, tables, graphs, and diagrams to interpret the level of applicability for CBS and map skills is quite high. Acquiring these skills with GIS will give the student the opportunity to work in the field. In this way, one of the main functions of learning, the theory of reflecting what you have learned into life, will also be activated.
In the formal education-training process, which we can express as the process of acquisitioning aims and behaviors set within the framework of a specific plan, the basic content of each course is determined by the educational programs. Students are expected to acquire knowledge and skills under the guidance of both teachers and textbooks prepared in accordance with the determined curriculum. From 1924 until 2005, most of the instructional program in the Social Studies curriculum (SSCEC) includes acquisition of knowledge as well as skills. According to the 2005 SSCEC, skills are defined as abilities designed to for students to acquire in the learning process and to ensure their transference to daily life (Ministry of National Education (MoNE), 2005). Although skills training have been among the aims of the National Education Basic Law since 1973, the implementation in schools started with the 2005 curriculums (Artvinli, 2020).

When the literature is examined, it will be seen that a lot of research has been done, especially about skill acquisition in the Social Studies course curriculum for students; the activities and benefits of teachers in the process of acquisitioning skills; examining the structure of skills; and comparing the skill size of 2005-2018 curriculum (Baykara, 2006; Demir, 2006; Narin & Aybek, 2010; Çelikkaya, 2011; Gelen, 2011; Çelikkaya, 2012; Sönmez & Aksoy, 2012; Mutluer, 2013; Sönmez & Aksoy, 2013; Taşkıran, Bağ & Bulut, 2016; Çoban & Akşit, 2018; Çelik & Kamış, 2019; Çelikkaya, Yıldırım & Kürümlioğlu, 2019; Çiftçi & Akça, 2019). Basic geographical skills, such as location analysis, mapping and navigation, are among the skills that are primarily intended for students from primary school to university education in most countries. From the first grade in the United States of America, studies are carried out to provide students with location, map and direction skills within the Social Studies course.

As a result of the importance given to these skills, when you ask a citizen on the street for an address, it will be seen that they correctly use the concepts of direction (for example, west-north, rather than right-left expressions) in directions (Tuna, Demirci & Gültekin, 2012). It can be seen that topics related to Geography are focused on five basic concepts in the teaching processes and in geographical research. Concepts that can be
considered as place, location, relations between places, mobility (migration) and regions are used as tools in explaining and teaching geographical issues (Taşkiran, Baş & Bulut, 2016).

**Purpose of the Present Study**

The aim of this research was to analyze the applicability of the acquisitions in the 2018 geography course curriculum in terms of geographic information systems. The availability of geographic information systems in geographical education is of great importance for the content and evaluation of the objectives of the geography course. Looking at the geography curriculum, it was determined that the program was based on the ability of geographical inquiry. Creative thinking skills, problem solving skills, decision making skills, as well as the skills of using information technologies are also among the skills that the program brings.

**Method**

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**Design**

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body of texts, images, and symbolic matter, not necessarily from an author’s or user’s perspective” (Wachter, 2010).

**Results**

In this study, four of the acquisitions associated with location analysis capability in the 2018 SSCEC, are shown in Table 1. The location analysis capability appears in the learning area People, Places and Environments. For 2018 SSCEC taught in Grades 4.5.6.7., there are a total of 131 achievements and 432 lesson hours reserved in the curriculum for teaching these achievements. Between this number of acquisition and course hours, only six acquisitions and 20 course hours are allocated to location analysis skills in SSCEC for Grade 4 (Türker, 2021).

For SS.4.3.2. “It sketches the places uses in his daily life”: The topics covered by the acquisition are given with two pages under the heading “Let’s make a location description”. An example of a sketch was given in the section that began with expressions aimed at understanding the bird's-eye view point and students were asked to draw a sketch showing the places known to everyone in the neighborhood where they lived. For “SS.4.3.4. “By observing the weather events occurring around it, transfers findings to Illustrated graphs.”: The issues covered acquisition are given in a four-page section of the textbook titled “Weather.” After talking about weather events and what the weather is in the section, a weather table and graph are included based on observations made by the student (Türker, 2021).

**Discussion**

In the textbooks prepared according to the 2005 SSCEC, it was envisaged to acquire one skill under a learning area or theme, while in the 2017 SSCEC it was proposed to acquire more than one skill in one learning area (Çoban & Akşit, 2018). The program, which was first implemented in 2017 and updated with a final version from 2018, is only seen at fourth grade, “People, Places and Environments”. In this area of learning, it is also desirable to acquire the skills of “detecting space, using maps, analyzing location, drawing and interpreting tables, graphs and diagrams” (MoNE, 2018a). It is thought that it would be more
appropriate to give achievements that are directly related to skills, as in the 2018 Geography course curriculum, rather than collectively giving skills under the learning area in general without distinguishing them for achievements under the learning area (MoNE, 2018b).

**Conclusion**

Although it is often emphasized that the achievements mentioned in educational programs are prepared to guide the teacher in teaching, skills and values for students, and the main job falls on teachers, the role of textbooks is great. Although information and resources are now easily accessible thanks to technological possibilities, there are problems at the point of accessing accurate and reliable information and not questioning its accuracy. For this reason, textbooks should be carefully prepared as the main guide and reference book. Textbooks, which are the visible face of a well-prepared curriculum, are also of great importance for the success of the program. Öztürk & Öğreten (2017) and Aydemir (2017) in their research on the adequacy of textbooks in acquisitioning skills in 2005 SSCEC, they concluded that textbooks are not sufficient in acquisitions skills in accordance with the opinions of teachers. Similar to the studies conducted by Artvinli & Kaya (2010) and Artvinli (2009), it would be useful to conduct studies to determine the levels of learning outcomes and skills in SSCEC in textbooks.

Although the way skills are given in the curriculum and textbooks is important, the course teacher’s view and abilities to acquire skills also play a big role. It will be useful for teacher candidates to take the necessary courses related to teaching skills during their undergraduate education. It is also believed that planning in-service training activities will benefit senior teachers who are active but have not encountered skills training issues in the first years of their professional education and professional life. Contrary to what is thought, a study conducted by Gelen (2011) on the acquisition of some common thinking-related skills concluded that teachers with professional seniority of 21 years and above are more effective in acquiring thinking skills.

The main mechanism of this research is the applicability of these skills in terms of geographic information systems. A GIS-supported geographical education will reflect the
existence of the capacity to increase the functionality of the course. Geography lesson in the curriculum the acquisitions for the year 2018 are evaluated in terms of geographical skills when these skills to work in the field especially, tables, graphs, and diagrams to interpret the level of applicability for CBS and map skills is quite high. Acquiring these skills with GIS will give the student the opportunity to work in the field. In this way, one of the main functions of learning, the theory of reflecting what you have learned into life, will also be activated.

References


