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# GEOGRAPHY OF EUROPE FOR TEENAGERS – HOW TO APPLY PROGRESSIVE INQUIRY IN MOODLE ENVIRONMENT

*Merja Kuisma*

## Abstract

Students fifteen years of age studied the Physical and Human Geography of Europe with the help of educational dialogue, co-operative learning, Progressive Inquiry (PI) and the Information and Communications Technology (ICT). Moodle was used as a digital learning environment. Different pedagogies helped the pupils in learning and knowledge building and their awareness of a variety of information sources increased. They also learned to draw and understand different kinds of maps and charts.

## Introduction

I work as a teacher of Biology and Geography at Teacher Training School of Tampere. I have designed this practise for an elementary course, Geography of Europe, for the students in comprehensive school. The course lasted eight weeks in spring 2008. The students

were 15 years old and at 8<sup>th</sup> grade. The class had 24 students and they were taught partially in English while Finnish was the main language. I have continued with this practise since then with every bilingual class I have taught.

I decided to use the Progressive Inquiry (PI) in this particular course because the students had studied Natural Geography and Human Geography before so they had a fairly good grip on geographical way of thinking. I thought that PI would give a fruitful approach right from the start as our objective was to get to know European countries from a geographical point of view.

Progressive inquiry means that the students decide themselves what the things are that they'd like to know about their subject. The teacher acts as a tutor and helps to find different ways of thinking. Furthermore the student is able to observe the way his or her thinking is changing. This process enhances knowledge building.

With the help of moodle I could tutor the students smoothly towards even more geographical approach in their study plan. I also wanted to apply some co-operative methods because in my point of view it helps to learn things much more effectively than solitarily made exercises. Information and communications technology (ICT) fits to this project very well as it provides tools for co-operative learning and PI.

## Objectives

The students were expected to learn a geographical point of view when getting to now a national state. The subjects that they were expected to learn were of Natural Geography: topography, how the landscape has been formed, tectonic plates, erosion, climate, vegetation and of Human Geography: livelihoods, means for transportation, languages, religion and demographic transition.

One objective was to learn how to visualize geographical pieces of information. The students were supposed to draw by themselves and interpret different kinds of maps, climate charts and population pyramids.

They were also supposed to learn that sharing information makes the learning process more interesting, multiform and fun. In addition the students would learn different ways of using a digital learning environment called moodle and a variety of atlases, magazines, newspapers and textbooks. They would also strengthen their English skills as some of the materials and exercises were in English.

## Methods And Technologies

In moodle we used discussion forums, wiki, exercises and tests. Each pair started by choosing a picture that was put in moodle and they had a brain storm of what they saw in that picture and what they already knew about that country. They wrote their ideas in moodle's discussion forum. The discussion forum was named after their country. Secondly they wrote down what they would like to know more. I then reminded them to think like a scientist of Geography. With the help of moodle I could tutor the students smoothly to shape their study plan. The students exchanged their ideas of what to study about their country. And it was often the students who gave the best comments on each other's plans. This is the way they applied PI and co-operative learning.

We used moodle in some exercises as well, like the erosion of British coastline. The instructions and the links were put in moodle. There was also one voluntary exercise, wiki, in moodle where one could solve a puzzle dealing with Geography of Europe and add one question of her or his own.

There was a multiple choice test dealing with Natural Geography. Each student could take the test when she or he felt ready for it. The test was available in moodle.

We also used notebooks because one aim of this course was to learn to draw and understand different kinds of maps and charts. The students drew maps and charts and explained them in their notebooks. As they worked in pairs I also encouraged the peers to discuss the symbols and colours to be used together. In addition, they shared the information of the best sources of materials and ideas in moodle's discussion forum.

We used co-operative learning as we studied the external processes that shape the landscape. Firstly there were six groups of four students. Each group got acquainted with one of the topics: weathering, erosion by rivers, waves, ice, wind and human activity. Secondly we moved on to four groups of six students and each student told the others what kind of a process he or she knew of. The ones who were listening to the expert filled in a picture they were given with correct terminology.

We used two classrooms. The other one had the atlases, maps, textbooks and drawing materials and the other one was a classroom with computers. Each student was able to go on with their country study at home and they could ask for help or comment on each other's work with the help of moodle. There was also one voluntary exercise, wiki, in moodle where one could solve a puzzle dealing with Geography of Europe and add one question of her or his own.

## Materials Used

We used a textbook designed for the course, a variety of atlases, books that were found in the library and magazines and newspapers for fresh news. We also used the internet. We used some narrative tools like web pages, images and video files for information. There was a very useful web site with interactive simulation of the landscapes of Northern

Ireland: <http://www.bbc.co.uk/northernireland/landscapes/explore.shtml>. The same gateway offered an interactive animation of the population growth in Britain: [www.bbc.co.uk/history/interactive/animations/population/index.shtml](http://www.bbc.co.uk/history/interactive/animations/population/index.shtml).

We found a lot of useful information in [www.census.gov/population/international/](http://www.census.gov/population/international/) -pages. With the help of its International Data Base the students drew population pyramids of their countries. We used Google as a search engine and <http://fi.wikipedia.org> for quick help.

Some of the materials were in English some in Finnish. The students learned that there are many different ways of finding geographical information. They also discovered the differences in these sources and differences in the ways they could use them and that these all help them to learn.

## The Working Process

In this course every student learned the basic topics of Natural and Human Geography with the help of educational dialog, pair work, Progressive Inquiry and co-operative learning. With the help of information found in their textbooks, other books and magazines as well as on the internet and the material teacher gave them through moodle the students learned how the formations of nature were born and how those are constantly evolving. By using the same variety of sources they also learned how people earn their living and why does it differ between different areas. They also wanted to know why some areas are more densely populated than others and what the means for transportation are. In addition they learned how the population growth has changed during the centuries and decades.

At the end of the course the students learned the diversity of European countries as we had a fair of tourism. Then every pair played the role of representatives of a country. They tried to sell as many trips to that country as possible by telling all the wonderful and interesting

things about it and showing different kinds of maps they had drawn. The others played a role of a tourist or a businessman planning a trip abroad. Then they switched the roles.

## Assessment, Self-evaluation And Feedback

My assessment of each student's involvement in the learning process and how well they reached learning objectives included several things.

a) The final report of the country and the way the pair processed it. Things that were considered were: causal relationships when explaining the geographical phenomena, visualization of geographical pieces of information, the original questions, which new questions rose. b) The individual test results c) The activity of the student during our course including his or her self assessment: What did you find most interesting/ easy/ difficult/ amazing and why? Assess how well did you reach your learning objectives. What was your input to this project? How well did the co-operation work with your partner and why?

The criteria of how to get different grades was explained to the students at the beginning of the course. 20 per cent of the grade they got came from the tests, 20 per cent from the activity they showed during the lessons and at home and 60 per cent came from the country study. Even though they made the study in pairs everyone wrote it down in her or his own notebook. I assessed everyone's notebook separately. The way the student used different tools during this course and the way she or he helped one's partner also affected the grade.

We also had a feedback sheet and every student marked their opinion about their own activity of using moodle in different tasks, how they found the tasks and how well they learned. They also commented on their peer's contribution. As a teacher I told them my assessment on these topics so that everyone could see if our assessments matched.

Only two of the students commented the methods we used in a negative way like "It was boring." Most of the students had positive

comments such as “It was easy to use moodle as I often was using my computer anyway.” and “It was interesting and fun!” A couple of them had a neutral opinion: “It was ok.”

What can other teachers implement from this project in their classes?

The methods that were used are easily adaptable to any discipline or subject matter. This project is an example of how the teacher can use Progressive Inquiry (PI) and Information and Communications Technology (ICT) to promote learning and knowledge building. It’s one example of how to apply a digital learning environment such as moodle.

Organization called Science On Stage showed interest towards this practise by choosing it to be one of the teaching methods to be introduced to teachers of Science in a Science On Stage conference in Berlin in 2008. After a small presentation there I was asked to write an article about it at it was published in a leaflet called Teaching Science In Europe 3 in 2010.

What are the advantages of a digital learning environment? I observed that there were several advantages due to using moodle:

- Even the most shy and cautious children dared to write their opinion in moodle discussion and wiki sections.
- Some of the children dared to get more creative while having the conversation and planning in moodle. Despite of that I think that it’s just as important to enhance their abilities in face to face contacts as well.
- The students reached their learning objectives well.
- Students’ motivation increased as they made questions for themselves. Many of them had a boost of motivation because they got to use ICT.
- The students were able to be in contact with each other as well as with the teacher. They could rapidly exchange observations of the best information sources and ideas.



- It was easy to hand out exercises which included digital maps and animations.
- The students were able to take a few tests when it suited their timetable best. They also received feedback of their test results right away. And the teacher saved some time. 🍷

### Further reading

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- <http://www.helsinki.fi/science/networkedlearning/eng/delete.html> Centre for Research on Networked Learning and Knowledge Building. Development of learning theories. (Read 19.8.2011)