

Interest research in secondary schools on Geosciences concepts

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The teaching of geology as a separate discipline in secondary school curricula has been progressively reduced during the last 20 years in European countries. In some cases, national curricula have set geology as a supplement matter of biology, geography and environmental sciences. However, geology and Earth sciences are not subsidiary items of these "natural science" disciplines.

This secondary role assigned to geology is creating serious concern among geologist community due to the substantial drop of geology contents in Secondary school curricula, which will presumably produce a consequent drop of geology students in universities and probably the lack of geologists in the society.

Geoschools project, which brings together geoscientists from universities, museums, geoparks, teaching training institutions and schools aims to provide the European education community with a common curriculum on geosciences for secondary education.

Design and Procedures

In order to prepare this common curriculum, Geoschools' partners has been decided to investigate the interest of the school students of 15-16 years old and the teachers who teach geosciences, mainly geologists. For this purpose, they have organized an "Interest research" on geosciences concepts among schools of the participating countries -Austria, Greece, Italy, Portugal and Spain. The data sources for the development of the questionnaires in this study were the curricula of Geoschools partners' countries.

A survey instrument was developed to facilitate data collection from participating students and teachers. The survey included both structured (or closed) questions and a small number of open-ended questions. This was intended to allow researchers in this study to capture and study nuances of perceptions and attitudes that tend to go undetected in closed questions.

The questionnaires contain 16 chapters which present useful knowledge for students' every-day lives, for the protection of our planet (holistic significance for the protection of environment) but also knowledge that can save their lives or the lives of others (in earthquakes, natural disasters, etc.).

Questions in the survey were grouped in five sections. The first section aimed to determine students' demographic characteristics and provide information regarding students' family circumstances.

In the next sections questions pertaining to the students' geosciences interests were asked. More specifically, the second section (chapters 1-14) introduces the respondents to the conceptual framework. There are 200 passages from different curricula that the reader is asked to code. The third section (chapter 15) defines the role of geosciences in

the society. The fourth section (chapter 16) is related with the teaching strategies. The fifth section asks respondents to express a free comment and give them the opportunity to elaborate on their views and motives.

Questionnaire's chapters	
<ol style="list-style-type: none"> 1. <i>Earth position in the Cosmos</i> 2. <i>Earth</i> 3. <i>Palaeontology</i> 4. <i>The measure of time</i> 5. <i>Tectonics</i> 6. <i>Earth is changing</i> 7. <i>Natural hazards</i> 8. <i>Natural resources and mankind</i> 	<ol style="list-style-type: none"> 9. <i>Humans activities alter Earth</i> 10. <i>Geodiversity, Earth protection and sustainable development</i> 11. <i>The Earth yesterday, today and tomorrow</i> 12. <i>Brief geological history of your region</i> 13. <i>Geological maps</i> 14. <i>Geology in everyday life</i> 15. <i>How to teach geosciences? Which way would you like to be taught on geosciences?</i> 16. <i>General remarks (about the science of Geology)</i>

The questionnaires have already distributed in 100 schools from urban, suburban, rural and remote areas in Austria, Greece, Italy, Portugal and Spain. It is estimated that at least 100 teachers of relevant disciplines (geology, and related sciences) and 3.000 pupils (15-16 years old) participated in the research.

A protocol designed to analyze the results of the research and the elaboration of the results, with more than 200 variables, will guide Geoschools' partners to suggest a common geosciences curriculum in Europe which will express the interest of schools' students and teachers and not only the ideas and suggestions of experts.

Geosciences concern the geological materials and the processes that provide the foundation on which we have built our societies and with all of the natural resources which support our day-to-day existence. It has shaped our countryside, underpinned our cultural development and controls many of the world's most "iconic landscapes". It is because of this that the Geosciences must be part of the wider acceptable common curriculum, in order that future generations of European citizens value their heritage, landscape and history.

This new common curriculum might provide a valuable instrument to create social and political concern of geosciences, as well as to raise interest and enthusiasm in Secondary school students for the knowledge of Earth.



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