



## **Student Performance Q&A: 2013 AP<sup>®</sup> Human Geography Free-Response Questions**

The following comments on the 2013 free-response questions for AP<sup>®</sup> Human Geography were written by the Chief Reader, David A Lanegran of Macalester College, St Paul, Minnesota. They give an overview of each free-response question and of how students performed on the question, including typical student errors. General comments regarding the skills and content that students frequently have the most problems with are included. Some suggestions for improving student performance in these areas are also provided. Teachers are encouraged to attend a College Board workshop to learn strategies for improving student performance in specific areas.

### **Question 1**

#### ***What was the intent of this question?***

This question determined students' understanding of ways in which the economic landscape reflects spatial processes and governmental policies. The students were provided with two well-known centers of development: the "Research Triangle" of North Carolina and the "Silicon Valley" of California. The students were asked to discuss the role investment capital, labor, and government policies contributed to the development of these centers of business and industry over the past 40 years. The students were then asked to define the concept of agglomeration and explain its role or impact in the further development of such regions. The concepts and theories of industrial localization and economic development are critical to human geography; therefore, this question was focused on one of the fundamental themes of the course. In addition, the concepts of sovereignty and a state's power to control its economy are all basic concepts in the political geography section of the course. The purpose behind the examples was to give the students an authentic frame for their answers. These two regions are well known around the world, and therefore should have enabled students to envision the type of regional development the geography concepts seek to explain. The questions are about important aspects of the students' lives; in this case, the developments of new technology and employment potentials, as well as the spatial dynamics of the national economy.

#### ***How well did students perform on this question?***

The mean score was 2.19 out of a possible 8 points. There were a large number of zeros on this question.

#### ***What were common student errors or omissions?***

In the first part of the question, students were asked to discuss three factors that contribute to the rise of high-tech centers. The most common errors involved the role of investment capital. Students either did not understand what investment capital is or were unaware of the geography of capital investment in the contemporary world. While students had a general understanding that skilled labor is important in high-tech centers, many believed that low-cost labor was an important factor in the centers' growth. They also had a misconception of the importance universities and other institutions of higher education are to the

development of the high-tech industry. Finally, while many students have some understanding of the importance of government regulation, they do not understand the role of direct investment by governments in the development of technology. Many students know the names of individuals associated with cell phones and social media, but they are unaware of the interplay of processes that create an economic landscape. This became obvious in their attempts to define agglomeration and assess its role in the further development of the high-tech centers. A significant percentage of the students confused agglomeration, a spatial process, with the business practice of cooperate mergers and takeovers.

***Based on your experience of student responses at the AP® Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?***

Teachers should be aware that equal weight is given to all sections of the course. It is necessary to teach the basic concept of economic geography and the models of economic localization so students will have a solid base upon which they can build understandings and explanations of major developments in the world around them. We realize that many teachers have come to the subject via history and may wish to focus on the portions of the course that is reflective of world or United States history. However, in the economic geography and industrial location section of the course, teachers will need to go beyond the historic context to the broader concepts and quantitative aspects of this subfield. It is also important to present students with a wide range of examples of the impact of geographic processes on economic development.

AP® Human Geography teachers should teach about the use of ambiguous pronoun references often used in student response, as opposed to specific language, which clarifies what the student knows, and exactly what or who is involved.

## **Question 2**

***What was the intent of this question?***

This question was designed to give the students an opportunity to apply their knowledge of the demographic transition to a contemporary population development of concern in all developed countries, but especially Japan and European countries. Rather than asking students to discuss the model of the demographic transition, they were asked to assess the consequences of lower birthrates and higher life expectancies for populations in the fourth stages of the demographic transition. This is an authentic question because essentially all students taking the test live in developed countries. The question probed the students' understanding of changes in the dependency ratio without actually asking the students to define that concept. Part A asked students to identify and explain two reasons why the average age is increasing in developed countries. Part B asked students to identify and explain one social consequence and one economic consequence countries face as their population ages in the future.

***How well did students perform on this question?***

The mean score was 4.36 out of a possible 8 points.

***What were common student errors or omissions?***

Most students were able to provide one reason with a correct explanation for the aging of populations in developing countries. The most common omissions were to discuss several reasons for increasing life expectancy, but not discuss causes for declining fertility or to discuss declining fertility without discussing increased life expectancy. A second common error was students did not clearly differentiate between social and economic consequences. Therefore, they wrote about either two social consequences or two economic consequences. The majority of the students understood enough about population geography to earn 4 points.

***Based on your experience of student responses at the AP® Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?***

Most students have a basic knowledge of the demographic transition model and why it is important. Points were lost in this question because of incomplete answers which indicates that students did not understand the implications of the model for culture and economy of countries. Teachers should always make sure their students understand the applications or implications of the models they are learning.

### **Question 3**

***What was the intent of this question?***

This question probed the students' understanding of the changing transportation technology; specifically, how railroads and the Interstate Highway System affected cities in the United States. The impacts that changing technologies of communication and transportation have on the urban and cultural landscapes have fascinated geographers and other scholars for over a century. It is described and analyzed in all of the major textbooks. By asking about the impact of shifting technology on cities, the Test Development Committee is able to assess not only how well students understood basic concepts of urban geography, but also how well the students understand the process of economic development that occurred in the United States. This question enabled students to use some of their knowledge of history to enhance their geographic understanding. Like Question 1, this question was also authentic because the development of cities in the United States has a direct impact on the lives of most students taking the exam. The first part of the question was designed to allow students to demonstrate their knowledge of the Railroad era (third epoch of urbanization) in the United States by discussing how the railroad impacted both the size and form of cities. In the second part of the question, students were expected to show an understanding of how the shift to freeway travel further affected the size and shape of cities. This question probed students' understanding of several major concepts of human geography, including the various models of internal spatial structure of cities, "time-space compression," threshold and range, suburbanization, and migration.

***How well did students perform on this question?***

The mean score was 3.33 out of a possible 8 points.

***What were common student errors or omissions?***

Students tended to fall back on their knowledge of American history when answering the first part of the question and discussed the role of railroads in western expansion in a general way without focusing on cities. Many students were able to make general statements about railroads causing cities to grow, but were unable to explain the causal factors behind such growth. Because railroad development caused some cities to grow and others to decline, it was crucial for the students to be explicit in their discussions. Their responses indicate a much lower understanding of how the railroads affected the form of cities. Students did not see that this question could have been successfully answered if they used the models of internal structure, specifically the sector or Hoyt Model.

Students did better on part B of the question. They understood the role of freeways in the rapid suburbanization of the American population. This topic is a featured part of the outline and it appears most teachers cover the issues in detail.

***Based on your experience of student responses at the AP® Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?***

It is assumed that students will have taken at least a basic American history course. Therefore, students need some basic historical knowledge to provide a context for many of the questions. Teachers working in those states without American and World History as middle school requirements will have to make sure their students know the historic context for some major geographic processes such as urbanization, population growth, and migration.

It is always important for teachers to help students see the connections among the various sections of the course; in this case, the links between the geography of urbanization, population growth, and economic development.

Geographers use models to help them predict spatial patterns and changes in those patterns. Students should be encouraged to think of the models of the internal spatial structure of cities as guides to their understanding of current patterns and not static patterns of past urban landscapes. Therefore, it is necessary for teachers to augment most textbook treatments of these models by making sure students understand the processes that produce the various patterns of land use. For example, students should understand that the railroad made it possible for large immigrations to cities and for the central business districts to develop because of the greater range of businesses. They also need to understand the impact of transportation on urban land use, the economic competition for access that creates a surface of land value, etc. Knowledge of the geometry of the models is only the beginning. Because most students lacked the ability to use the models, they could not quickly see the fundamental element of the question.