

Center for Technology and Teacher Education

Education across the Globe



Curry School of Education
University of Virginia

Credits
John Lee

Education across the Globe

Description of Module

- **Discipline:** Government and Geography
- **Specific Lesson Topic:** A comparison of education enrollment and expenditures on education in Africa, Asia, Europe, Latin America, North America, and Oceania.
- **Methodology:** Critical Thinking

K-12 Objectives:

1. Identify the type of data contained in a spreadsheet.
2. Develop the skills to use the Microsoft Excel program.
3. Identify the relationship between expenditures and enrollment in education.

Materials Needed:

- Microsoft Excel 97 or newer
- Print directions for using the spreadsheet

Procedures:

Step 1 In this lesson students will use statistics from *The Digest of Education Statistics 1996 / Table 389*. These statistics have been put into an [Excel spreadsheet](#).

Step 2 Using either a hand-held calculator or a computer-based calculator, students will need to convert the statistics to percentages. Students should divide the number in the column under a particular country by the number in the world total column. Have students enter these as percentages in new rows they create below the data. For example, to calculate Africa's population as a percentage of the world's total population, the students would divide $475,666/4,444,361$ and multiply by 100. Students should then enter this percentage in C16. Students should give this row a title, e.g. Percentage of World Population in 1980, and enter it in A16. They should then compute these figures for each country in each category and enter it in the table.

Step 3 Next, have students create a chart of the information in their spreadsheet. Students should complete separate charts for 1980 and 1990 data and should use the percentages they just calculated rather than raw data. The charts should depict:

- Percentage of world enrollment at all levels.
- Percentage of Public expenditures on education

How to make a simple chart

- *Highlight the rows with the data you wish to chart. Include the first row with the country names and the row with the data. Highlight only the cells in the row you wish to chart (NOT the whole row) To select rows that are not next to each other press and hold the control button.*
- *Click the chart button on the tool bar or pull down the insert menu and click chart*
- *A box will appear allowing you to choose the type of chart. Select column and click next. Have students try to make another chart by clicking row.*
- *The next screen is a verification of the data to be charted. If you highlighted the row before making the chart, the data range should be complete. Click next.*
- *Label the chart and axis. Click next.*

- *The last box is a confirmation, click finished.*

Step 4 Have students experiment with the different types of charts.

Step 5 To finish this activity students should summarize their findings from the charts. This can be done with a paragraph or through class discussion. Create questions that will give students the opportunity to think about the disparities in spending. Sample questions are in the Assessment section.

Assessment

K-12:

- Have students answer some specific questions about from the chart.
 1. Which region has the highest percentage of expenditures on education?
 2. Which region has the highest percentage of students enrolled in public schools?
 3. What is the relationship between expenditures in a region and the number of students enrolled?
 4. What conclusions can we draw about differences in education expenditures across the world?
- Have students speculate about the consequences of the answers to the above questions.

Methods:

- Discuss strategies for integrating math skills in this social studies' lesson. Seek out a mathematics professor or student and ask for feedback on how to include some different math strategies in the lesson.
- How can data used from this spreadsheet be used to generalize about the demographic groups represented in the chart?
- Assign students data from the social science disciplines and have them develop a spreadsheet lesson plan.

Related Resources:

[The Digest of Education Statistics 1996](http://nces.ed.gov/pubs/digest97/contents.html)

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