

Appendix A.3

GIS In Education National Survey and Results

The survey's original formatting enabled it to fit on three pages, double-sided, plus two single-sheet cover pages.

**Page 1 of survey:
Cover letter.**

28 October 1998

Dear Colleague:

You have been chosen to participate in a study of geographic information systems (GIS) in secondary education. Your name was selected from a listing of schools that own GIS software. This survey should take no more than 15 minutes to complete. The study is being conducted by Joseph Kerski, a doctoral candidate in geography at the University of Colorado, under the direction of Professor A. David Hill.

If you have questions about this survey, please contact Joseph Kerski at (303) 202-4315, joseph.kerski@colorado.edu, or Professor Hill at (303) 492-6760, adh@colorado.edu.

If you are not the teacher at your school who is using or considering using your GIS software, please route this questionnaire to that teacher.

Please return the enclosed form and the enclosed survey by 30 November 1998 in the enclosed postage-paid envelope to:

Joseph J. Kerski
Department of Geography
University of Colorado
Campus Box 260
Boulder CO 80309-0260

Thank you for participating!

**Page 2 of Survey:
Form Required by University Human Research Committee.**

This Form is required by the Human Research Committee,
University of Colorado, Boulder.

The purpose of this survey is to describe and explain the implementation of GIS technology in high school education in the United States. Your participation in this survey is voluntary. Your individual privacy will be maintained in all published and written data resulting from this study. The potential benefits of participating in this study include a heightened awareness of the ways in which GIS can be used in the curriculum, and an increased awareness of the advantages of the use of GIS. There are no risks associated with this study. Neither you nor the other teachers surveyed will receive any reimbursement for participating.

If you have questions regarding your rights as a subject or any concerns regarding this study, you may report them--confidentially, if you wish--to the Executive Secretary, Human Research Committee, Graduate School, Campus Box 26, University of Colorado-Boulder, Boulder CO 80309-0026, or to (303) 492-7401. Copies of the University of Colorado Assurance of Compliance to the federal government regarding human subject research are available upon request from the Graduate School.

I understand the above information and voluntarily consent to participate in the research entitled "The Implementation and Effectiveness of GIS Technology and Methods in Secondary Education."

Name: _____

Date: _____

Signature: _____

Please return this form with your completed survey. Thank you.

GIS in Education Survey

Survey results are in **BOLD** and appear to the right or below each question.

(1) What is your type of school? Circle all applicable choices:

- 1 Public
- 2 Private
- 3 Technical/Vocational
- 4 Magnet
- 5 Other _____

(2) What is your school's approximate enrollment?

- 1 Less than 250
- 2 250 - 499
- 3 500 - 999
- 4 1,000 - 1,999
- 5 2,000 - 2,999
- 6 3,000 or more

(3) What subjects do you teach? Circle all that apply.

- 1 History.
- 2 Geography.
- 3 Language Arts.
- 4 Other Social Studies. Please specify type(s): _____
- 5 Science. Please specify type(s): _____
- 6 Mathematics.
- 7 Computer Applications or Programming.
- 8 Other. Please list: _____

(4) How long have you been teaching?

- < 3 Less than 3 years
- 3-5 3 - 5 years
- 6-9 6 - 9 years
- 10-14 10 - 14 years
- 15-19 15 - 19 years
- 20-29 20 - 29 years
- >30 30 years or more

(5) What is the average class size of classes you teach?

10 or Less 11 - 20 21 - 30 Over 30

(6) Circle the approximate student / computer ratio in your class:

Less than 3:1 3:1 5:1 10:1 15:1 Greater than 15:1

(7) What is the highest level of education you have completed? Circle one.

- 1 Associate's degree (2 year)
- 2 Bachelor's degree
- 3 Master's degree or equivalent
- 4 Doctoral degree or equivalent

(8) Where were you first trained in GIS?

City _____ State _____

See Figure 3.6, Chapter 3, page 112.

(9) How were you first trained in GIS?

- 1 At a geographic alliance-sponsored event.
- 2 At a teacher inservice or summer institute.
- 3 At a GIS software company's sponsored training.
- 4 At a conference. Which one? _____
- 5 By another teacher.
- 6 On the Internet.
- 7 By a GIS user outside of the educational community.
- 8 I trained myself.
- 9 Other (please explain): _____

(10) How many total hours have you spent in formal GIS training classes? Circle your answer.

- A 0
- B 1 - 19
- C 20 - 39
- D 40 - 59
- E 60 - 79
- F 80 or over

(11) If you use GIS, in which grade level(s) do you do so? Circle all that apply.

- A Grade 9
- B Grade 10
- C Grade 11
- D Grade 12

(12) If you use GIS, in which subjects do you do so? Circle all that apply.

- 1 History.
- 2 Geography.
- 3 Language Arts.
- 4 Other Social Studies. Please specify type(s): _____
- 5 Science. Please specify type(s): _____
- 6 Mathematics.
- 7 Computer Applications or Programming.
- 8 Other. Please list: _____

(13) When did you obtain your first copy of GIS software? Circle your answer.

- A 1990 or before
- B 1991 or 1992
- C 1993 or 1994
- D 1995 or 1996
- E 1997 or 1998
- F I don't know.

(14) When did you begin using GIS in your classroom?

- A 1990 or before
- B 1991 or 1992
- C 1993 or 1994
- D 1995 or 1996
- E 1997 or 1998
- F I am not using it yet.

(15) Which choice best describes your use of GIS in your classroom this semester?

- 1 I do not use GIS at this time and have no plans to do so.
- 2 I am planning to use GIS.
- 3 I demonstrate GIS on a computer.
- 4 I prepare lesson materials using a GIS.
- 5 I use GIS in one lesson in one class.
- 6 I use GIS in one lesson in more than one class.
- 7 I use GIS in more than one lesson in one class.
- 8 I use GIS in more than one lesson in more than one class.

**(16) How many teachers at your school are using GIS, including yourself?
Circle your answer.**

- 0 No teachers
- 1 1 teacher
- 2 2 teachers
- 3 3 teachers
- >3 More than 3 teachers
- 4 Not sure

**(17) What percentage of students in your school are exposed to GIS?
Circle your answer.**

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

(18) To what extent will you use GIS next year compared with this year?

- | | | |
|--|--|--|
| 1 | 2 | 3 |
| I will decrease
my use of GIS
next year. | I will maintain
my present use of GIS
next year. | I will increase
my use of GIS
next year. |

(19) Briefly describe one lesson in which you use GIS: (For example: "Students use GIS in analyzing population change in neighborhoods around our school from 1970 to 1990.")

(20) How many hours per week are you spending, on average, outside of class time on GIS?

0 hours	1 hour	2 hours	3 hours	4 hours	5 or more hours
------------	-----------	------------	------------	------------	--------------------

Answer either question 21 or 22, whichever applies to you.

(21) I decided to use GIS because....

(22) I am not using GIS because...

(22) How much does your use of GIS result in these benefits? Circle your answer.

	None		Some		Very Much
Helps teach national, state, or district standards.	1	2	3	4	5
Enhances learning.	1	2	3	4	5

Provides exploratory tool for data analysis.	1	2	3	4	5
Provides employment skills.	1	2	3	4	5
Offers team learning environment.	1	2	3	4	5
Provides real-world relevance to subject.	1	2	3	4	5
Provides integration of different subjects.	1	2	3	4	5
Provides opportunities to partner with community.	1	2	3	4	5
Enhances motivation and student interest.	1	2	3	4	5

Others (please list): _____

(23) How much is your use of GIS hindered by the following constraints? Circle your answer

	None		Some		Very Much
	1	2	3	4	5
Complexity of software.	1	2	3	4	5
Cost of hardware and software.	1	2	3	4	5
Computers not accessible to my students.	1	2	3	4	5

Computers not capable of handling GIS.	1	2	3	4	5
Lack of time to develop lessons incorporating GIS.	1	2	3	4	5
Little administrative support for training.	1	2	3	4	5
Little technical support for training.	1	2	3	4	5
Class periods too short to work on GIS-based projects.	1	2	3	4	5
Lack of useful or usable data.	1	2	3	4	5
Lack of geographic skills among students.	1	2	3	4	5
Variable skill levels among students.	1	2	3	4	5

Others (please list): _____

(25) The most important thing that would improve my use of GIS in teaching is...

(26) Where are you running your GIS? Circle all that apply.

1 My own classroom. How many computers are in the class? _____

2 A shared school computer lab. How many computers are in the lab? _____

3 At home on a desktop or laptop computer.

4 No location.

(27) What operating system(s) do you use with your GIS? Circle all that apply.

Macintosh Windows 95/98 Windows NT Unix Not Applicable

(28) Does your school have a computer technical support staffperson(s)?

Yes

No

Yes, I am the technical support staffperson.

(29) If you have a technical support staffperson, circle how much support you receive from that person for your use of GIS:

1

2

3

4

5

Unaware
of GIS

No support
for GIS

Little support
for GIS

Some support
for GIS

Much support
for GIS

(30) How much support and/or encouragement do you receive from your administrators for your use of GIS? Please circle.

1

2

3

4

5

Unaware
of GIS

No support
for GIS

Little support
for GIS

Some support
for GIS

Much support
for GIS

(31) How many district, state, regional, and national educational conferences do you attend each year?

0

1-2

3-4

5-6

7 or more

(32) The most significant thing I have accomplished with GIS in the past year is...

(33) Circle your response to the following statement: "Using a GIS in the curriculum can make a significant contribution to a student's learning."

1
Strongly
Disagree

2
Disagree

3
Neither agree
nor disagree

4
Agree

5
Strongly
Agree

End of survey. Thank you for your participation!