THE IMPACT OF TECHNOLOGY ON ACADEMIC ACTIVITIES AMONG HIGH SCHOOL ECONOMIC EDUCATION PROGRAMS IN OHIO

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ABSTRACT

Technology in the classroom may assist in developing greater student interest and teacher participation in Economic Education classroom instruction. This study analyses the availability of technology in high schools throughout Ohio. There is a need to understand how effectively teachers are utilizing technology and computers to implement economic instruction in designated economics courses as well as in conjunction with other courses. It is possible that technology and computers will assist teachers in becoming more interested and comfortable in utilizing economic concepts in their course instruction. The survey collected teacher perceptions on variables such as the availability of computers, internet access, integration of computer and economic education concepts, and teacher training in technology. These variables were cross-correlated with socio-economic variables: school type, school category, teachers perception of student performance and teachers perception of school socio-economic status. The data presented in the study support the conclusion that technology integration is currently slower than optimum but the progress is being made. It will take the combined effort of schools, businesses, and university Centers for Economic Education to promote this much-needed combination of technology, the Internet, and economics for the benefit of all.

INTRODUCTION

In teaching introductory economics courses to college undergraduates, the most common historical pedagogical method used is the straight lecture. To make economics more accessible to a variety of learners, more diversified

pedagogical methodology is desirable. (Becker and Watts, 1995). Experientially based instruction and technology are two pedagogical methodologies that are a possible powerful combination to promote the understanding of economics in our secondary schools. An earlier study demonstrates that experienced-based economic education at the high school level promoted the transfer of economic reasoning to everyday decision making better than the historically used lecture method. (Kourilsky, 1985) In addition, information technology is increasingly being viewed as an effective tool in promoting economic education in the classroom. Wood (2001) has identified four benefits of applying information technology in the classroom. Agarwal and Day (1998) also found beneficial elements to implementing and integrating the Internet into course work. These beneficial elements were primarily centered on the ability of the Internet to enhance communication between the students and the instructor and the ability of the Internet to bring real world problems and applications into the economics classroom. The growth in use of technology by schools is strong; schools are adding computer and networking equipment, which enables a majority of schools to have Internet access in their buildings. The expansion of computers in schools is expected to continue. We do not however see examples of deep and extensive school-wide integration of technology into the curriculum (Glennan & Melme, 1996). The Glennan and Melme report states that the use of technology significantly affects classroom practice and tends to be limited to small groups of teachers who are excited by the potential of technology to motivate their students and to access new resources. With proper staff development and more access to technology in the classroom we are likely to see a growing numbers of teachers integrating technology into their coursework.

Proper and increased use of current technology in the classroom may help generate more student and teacher interest in the instruction of Economic Education. According to Katz and Becker (1999): The teaching of economics is lagging behind other disciplines in implementing instructional and ovations that engage students more actively in the learning process. (p. 194) "It does look as if the Internet is having an immense impact on virtually all aspects of the teacher and student learning experience, starting with the enriching of their interactions, to data they can now access, and extending to major influences on the environments and the formats in which they use these and other course materials." (p. 198)

Walstad and Rebeck (2000) found that it is highly likely that over half of high school graduates never receive formal instruction and economics during the

formative years of their education. There has been, however, a doubling of students taking economic courses since the 1980's. Part of this doubling of students receiving economic instruction has been due to states implementing curriculum mandates that schools shall provide for economic instruction. Ohio has such a mandate but allows economics to be taught either by a designated economic course or through the subject areas of social studies, government, or business education courses. Walstad and Rebeck (2000) conjecture, however, that requiring economics to be taught in government, business, or other subject areas may not be as effective as traditional economic instruction through a designated economics course (p.101).

There is a need to understand how effectively teachers are becoming in utilizing technology and computers to implement economic instruction. Both in designated economics courses as well as in conjunction with other courses. It is possible that technology and computers will assist teachers in becoming more interested and comfortable in utilizing economic concepts in their course instruction.

THE SURVEY

The authors initially surveyed Economic Education instructors in all 1,045 high schools in Ohio, concerning their perceptions about the availability of technology and computers within their schools. An initial mailing resulted in 278 responses (26.6%). Computer related economic materials were offered as an incentive to respond. A second, follow-up survey was mailed to non-respondents and non-computer related economic education material was offered as an inducement to respond. The second survey resulted in an additional 190 responses (18.1%). A total of 44.7% of the surveys were returned during late1999 to mid 2000.

The survey (Appendix 1) collected teacher perceptions on variables such as:

- Availability of computers
- Internet access
- Integration of computer and economic education concepts
- Teacher training in technology

- Use of economic education experiential based learning projects in the classroom

These variables were cross-correlated with socio-economic variables:

- Teacher perception of student ability
- School type
- School kind
- Teachers perception of school socio-economic status

The raw survey data show that most teachers responding have computer access and are involved the integration of economic education with other subjects. The survey explores the degree of use of economic based experiential learning projects compared to traditional economic classroom instruction. Following are the full results of the survey are presented in the paper, together with the authors' conclusions.

SURVEY LIMITATIONS

The survey was based on subjective analysis of the individual teachers. There was no attempt made to specifically quantify the categories of socio-economic status or school type. The respondents were also not asked to see specifically quantify student grade averages.

The survey did not attempt to determine the quality of the Internet access available to the respondents nor to the quality or quantity of the computers and computer labs available to the teachers. Thirty-eight percent (38.2%) of the surveys received did not respond to School Category. The reason for this may be that the teachers were asked to make a subjective determination concerning the category classification. The subjective nature of the ranking may have inhibited the response due to the uncertainty of the school districts classification.

The survey was also not able to determine the varying degrees of difficulty of the economic projects that the respondents claimed to be conducting. It could be conjectured that some of the projects were very involved and included a great deal of economic concept instruction. On the other hand other projects were most likely very simple with possibly few economic concepts involved. In the past, it has been the author's experience that teachers will conduct economic

projects without bringing out any concept instruction. It was beyond the scope of the survey to analyze the degree of economic instruction conducted in the projects.

The authors believe that it can reasonably be assumed that economic instruction is being provided in Ohio schools at a higher rate than this survey would lead us to believe. The authors suspect that teachers involved in economic instruction, but had no Internet or technology training, did not respond to the survey. It is believed that teachers who did have economic instruction and Internet and technology access were more motivated to respond than those who did not have such access

SURVEY RESULTS

Surveys were sent out to each high school in Ohio, a total of 1045. Two hundred and eighty three schools responded to the survey. Table 2 outlines the variables requested in this survey and the actual number and percentage of each variable replied to, and a complete compilation of survey responses.

It was especially encouraging to see that over 283 of the 468 respondents claim to have had either extensive or a moderate amount of training in teaching economic concepts. 42.2% of the respondents claimed to have at least a moderate amount of training in teaching economic concepts. 19.3% of the respondents claim to have received extensive training in economic concepts while only 5.9% of the respondents had no training to teach economic concepts.

Approximately sixty-two percent (61.8%) stated that they had their students do economic projects. Economic projects teach economic concepts through experientially based learning. A similar amount of respondents are also integrating economics into other subject areas. This infusion of economics into other traditional subject areas may be fostered by the use of economic projects and therefore beneficial for students who would, otherwise, fall into the non-economic instructed student category.

Of the 468 respondents, 370 (75.7%) said that they had Internet access in the classroom. 24.3% said that Internet access in the classroom was not available. 87.7% did have Internet access available through school laboratories while only 12.3% said that no Internet access was available through laboratories. 43.2% of the respondents said that they teach economic concepts in all of their classes while 56.7% said that they taught economics in select classes.

Overall, schools did not make available computers for teacher personal use at home. 51.7% of the respondents did claim that computers were available for personal use at school. 76.6% of the respondents said computers were available in the classroom and a very encouraging 90.9% said that computers were available through school labs. Fifty-five percent (55%) of the teachers had extensive or moderate amount of training in technology use in the classroom. About four percent (4.1%) of the respondents had no training in technology use in the classroom. An encouraging 70.6% was integrating computers into the instruction of economic concepts.

Most of the responses were received from public rural schools. A smaller percentage (32%) came from suburban schools. There was a very limited response from urban school systems (17.3%). Many of the respondents felt that their students were learning at grade level (49.9%) and most felt that their schools were from middle socioeconomic status (60.2%). 37 % and 26.8% felt that their students were learning below grade level and that they were from low socioeconomic status respectively. It is difficult to determine whether the 20 +percentage responding from these below grade level and low socio-economic categories can be seen as encouraging. It could be conjectured from Walstad and Rebeck (2000) findings that this is an improvement over the past decades. It leaves open the very real expectation that much more needs to be done in directing economic education to the urban lower socio-economic schools.

TABLE 2
Description of Survey Analysis & Percentage of Responses

Definition	Code	Variable Description	Count	%
School Type	ST1	Urban	66	17.2
	ST2	Suburban	124	32.3
	ST3	Rural	193	50.3
School Category	SC1	Public	200	73.8
	SC2	Private	35	12.9
	SC3	Parochial	36	13.2
Grade Level	GL1	9^{th}	6	1.3
	GL2	10^{th}	3	0.6
	GL3	11^{th}	12	2.6

TABLE 2
Description of Survey Analysis & Percentage of Responses

Definition	Code	Variable Description	Count	%
	GL4	12^{th}	56	12.3
	GL5	9-12	201	44.2
	GL6	10-12	36	7.9
	GL7	11-12	74	16.3
	GL8	Other	66	14.5
Student's Average	STAV1	Below grade level	173	37
	STAV2	At grade level	233	49.9
	STAV3	Above grade level	61	13
School Status	SS1	Low socio-economic	125	26.8
	SS2	Middle socio-economic	280	60.2
	SS3	High socio-economic	60	12.9
Available Computer in the Classroom	AVCOCL1	Not available	108	23.4
	AVCOCL2	Available	354	76.6
Available Computer in the Lab	AVCOLA1	Not available	42	9.1
	AVCOLA2	Available	420	90.9
Available Computer for Personal Use	AVCOPU1	Not available	212	45.9
	AVCOPU2	Available	250	54.1
Available Computer for Personal Use at Home	AVCOHO1	Not available	319	56.9
	AVCOHO2	Available	241	43.1
Available Computer for Personal Use at School	AVCOSC1	Not available	239	51.7
	AVCOSC2	Available	223	48.3
Available Internet Access in the Classroom	AVINCL1	Not available	119	24.3
	AVINCL2	Available	370	75.7
Available Internet Access in the Lab	AVINLA1	Not available	57	12.3
	AVINLA2	Available	405	87.7
Available Internet Access for Personal Use	AVINPU1	Not available	251	54.3
	AVINPU2	Available	211	45.7

TABLE 2
Description of Survey Analysis & Percentage of Responses

Definition	Code	Variable Description	Count	%
Available Internet Access for Personal Use at Home	AVINHO1	Not available	351	76
	AVINHO2	Available	111	24
Available Internet Access for Personal Use at School	AVINSC1	Not available	275	59.5
	AVINSC2	Available	187	40.5
Are you integrating computers into instruction of Economic Concepts?	INTEGCO1	Yes	321	70.6
	INTEGCO2	No	134	29.4
Have you had Training in Classroom Technology Use?	TECTRAIN1	Extensively	56	12.1
	TECTRAIN2	A moderate amount	198	42.9
	TECTRAIN3	Very little	189	40.9
	TECTRAIN4	None	19	4.1
Do you Teach Economic Concepts?	TEACHECON1	In all of the classes	198	43.2
	TEACHECON2	In select classes	260	56.7
Have you had training in Teaching Economic Concepts?	TEACHTRAIN1	Extensively	89	19.3
	TEACHTRAIN2	A moderate amount	194	42.2
	TEACHTRAIN3	Very little	150	32.6
	TEACHTRAIN4	None	27	5.9
Do you have your students do Economic Projects?	ECONPRO1	Yes	283	61.8
	ECONPRO2	No	175	38.2
Are you integrating Economics into other subject areas?	INTEGECON1	Yes	293	65.7
	INTEGECON2	No	153	34.3
Computer Type	COMTYP1	IBM	263	61.7
	COMTYP2	Apple/MAC	72	16.9
What are the Economic Concepts you teach?	ECONCONC1	Wants & needs, goods & services, scarcity, opportunity costs, and/or resources	106	23.4
	ECONCONC2	Supply & demand, productivity, factors of	39	8.6

TABLE 2
Description of Survey Analysis & Percentage of Responses

Definition	Code	Variable Description	Count	%
		production, international trade, and/or wealth creation		
	ECONCONC3	Both of any of 1 & 2	268	58.7

SURVEY CORRELATIONS

The survey of Ohio high teacher technology preparedness produced a variety of positive and negative correlations. A Pearson Correlation for two-tailed significance was run using SPSS. Among the most significant correlations were found among the categories of teacher perceived levels related to school type, student grade average, and school socio-economic status.

Table 3 shows a significant correlation between urban schools and teachers perceiving students as performing below grade level. This variable correlated significantly at the alpha 0.01 level. The urban school variable also correlated significantly with the lower socio-economic status. There was negative correlation between the urban school type and students performing at grade level and students coming from the middle socio-economic status.

Students performing below grade level correlated significantly with lower socio-economic status. Students performing at grade level correlated significantly with students from middle socio-economic levels. Students performing at grade level, in turn, correlated negatively with urban schools and the lower socio-economic variable. Low socio-economic status schools also correlated negatively with the availability of Internet access.

Other correlations of significance were found in and schools rated as high socio-economic status which correlated with the suburban school type. Private schools correlated negatively with rural school types but positive with student averages above grade level. Rural schools correlated significantly with students performing at grade level. Students performing above grade level correlated significantly with private schools. Schools rated as higher socio-economic status correlated significantly with private schools and students performing above grade level. Rural schools correlated positively with schools classified having middle socio-economic status.

Other areas of correlation, which proved interesting, were found with correlations between suburban schools and the availability of computers in laboratories. It is not surprising that there was a significant correlation between the non-availability of the Internet in laboratories and schools rated and the low socio-economic status level. The availability of the Internet and computer available in laboratories was significant with suburban schools. The non-availability of computers in laboratories correlated significantly with students performing below grade level. Teachers integrating economic concepts in all classes correlated significantly with suburban type schools.

The variable of teachers using economic projects in their class had many significant correlations. Teachers not having students doing economic projects correlated significantly with students performing below grade level. Teachers having their students do economic projects correlated significantly with students performing above grade level. Students doing economic projects also correlated significantly with students from high socio-economic level status. In turn, teachers having very little training in economic concepts correlated significantly with teachers not doing economic projects with their students. Teachers who reported having very little training in technology use in the classroom correlated significantly with teachers not offering economic projects. Having students do economic projects correlated positively with teachers who have had moderate amount of technology training. Conversely, teachers who were not doing economic projects correlated significantly with teachers reporting that they were not integrating computers into the instruction of economic concepts. The economic project variable also correlated positively with available internet access in the classroom and in the lab.

TABLE 3: Pearson Two-tailed Correlations

	ST1	ST2	ST3	SC1	SC2	SC3	STV1	STV2	STV3	SS1	SS2	SS3
ST1	1.000	-0.247	-0.346	0.068	-0.094	0.066	0.080	-0.053	-0.031	0.211	-0.101	-0.128
ST2	-0.247	1.000	-0.513	0.062	0.048	-0.085	-0.075	0.003	0.110	-0.292	-0.002	0.410
ST3	-0.346	-0.513	1.000	-0.014	-0.226	-0.230	-0.048	0.137	-0.149	0.116	0.081	-0.277
SC1	0.068	0.062	-0.014	1.000	-0.250	-0.254	-0.008	0.028	-0.031	0.048	-0.038	0.001
SC2	-0.094	0.048	-0.226	-0.250	1.000	-0.083	-0.036	-0.084	0.178	-0.082	-0.087	0.231
SC3	0.066	-0.085	-0.230	-0.254	-0.083	1.000	-0.041	0.022	0.030	-0.159	0.102	0.047
STV1	0.080	-0.075	-0.048	-0.008	-0.036	-0.041	1.000	-0.757	-0.302	0.183	-0.081	-0.138

TABLE 3: Pearson Two-tailed Correlations												
STV2	-0.053	0.003	0.137	0.028	-0.840	0.022	-0.757	1.000	-0.382	-0.148	0.178	-0.067
STV3	-0.031	0.110	-0.149	-0.031	0.178	0.030	-0.302	-0.382	1.000	-0.050	-0.130	0.281
SS1	0.211	-0.292	0.116	0.048	-0.082	-0.159	0.183	-0.148	-0.050	1.000	-0.755	-0.219
SS2	-0.101	-0.002	0.081	-0.038	-0.087	0.102	-0.081	0.178	-0.130	-0.755	1.000	-0.446
SS3	-0.128	0.410	-0.277	0.001	0.231	0.047	-0.138	-0.067	0.281	-0.219	-0.446	1.000
	AVL1	AVL2	AVA1	AVA2	AVH1	AVH2	AVC1	AVC2	ANL1	ANL2	ANA1	ANA2
ST1	0.052	-0.520	0.022	-0.022	0.006	-0.006	0.011	-0.011	0.085	-0.085	0.091	-0.091
ST2	0.012	-0.012	-0.073	0.073	-0.049	0.049	-0.070	0.070	-0.033	0.033	-0.138	0.138
ST3	-0.105	0.105	0.007	-0.007	0.083	-0.083	0.080	-0.080	-0.138	0.138	-0.038	0.038
SC1	-0.070	0.070	-0.018	0.018	-0.010	0.010	0.022	-0.022	-0.155	0.155	-0.075	0.075
SC2	0.112	-0.112	0.052	-0.052	-0.003	0.003	0.031	-0.031	0.224	-0.224	0.141	-0.141
SC3	0.164	-0.164	-0.064	0.064	-0.120	0.120	-0.107	0.107	0.143	-0.143	-0.060	0.060
STV1	0.006	-0.006	0.082	-0.082	-0.072	0.072	-0.058	0.058	0.035	-0.035	0.091	-0.091
STV2	-0.060	0.060	-0.099	0.099	0.056	-0.056	0.070	-0.070	-0.091	0.091	-0.077	0.077
STV3	0.072	-0.072	0.032	-0.032	0.012	-0.012	-0.033	0.033	0.077	-0.077	-0.010	0.010
SS1	-0.003	0.003	0.079	-0.079	0.134	-0.134	0.042	-0.042	0.031	-0.031	0.112	-0.112
SS2	-0.015	0.015	-0.022	0.022	-0.070	0.070	-0.025	0.025	-0.072	0.072	-0.048	0.480
SS3	0.026	-0.026	-0.090	0.090	-0.097	0.097	-0.033	0.033	0.036	-0.036	-0.094	0.094
	AVU1	AVU2	AVO1	AVO2	ASC1	ASC2	IC01	ICO2	TRI1	TRI2	TRI3	TRI4
ST1	-0.035	0.035	-0.017	0.017	-0.054	0.054	-0.079	0.079	-0.038	0.009	-0.025	0.102
ST2	-0.062	0.062	-0.082	0.082	-0.048	0.048	0.126	-0.126	0.029	0.078	-0.067	-0.076
ST3	0.054	-0.054	0.096	-0.096	0.073	-0.073	-0.001	0.001	-0.019	-0.006	0.054	-0.087
SC1	-0.058	0.058	-0.020	0.020	-0.072	0.072	0.067	-0.067	0.010	0.020	-0.043	0.039
SC2	0.033	-0.033	0.065	-0.065	0.036	-0.036	-0.112	0.112	-0.056	0.033	-0.039	0.105
SC3	-0.058	0.058	-0.120	0.120	-0.122	0.122	-0.018	0.018	-0.058	-0.056	0.103	-0.020
STV1	-0.018	0.018	-0.067	0.067	0.037	-0.037	-0.002	0.002	0.055	-0.236	0.175	0.065
STV2	0.011	-0.011	0.023	-0.023	-0.013	0.013	0.019	-0.019	-0.045	0.159	-0.118	-0.028
STV3	-0.002	0.002	0.055	-0.055	-0.043	0.043	-0.005	0.005	-0.008	0.114	-0.090	-0.049
SS1	-0.009	0.009	0.046	-0.046	0.006	-0.006	-0.115	0.115	0.043	-0.084	0.038	0.046
SS2	0.034	-0.034	0.013	-0.013	0.012	-0.012	0.062	-0.062	-0.026	0.027	-0.014	0.011
SS3	-0.052	0.052	-0.084	0.084	-0.049	0.049	0.062	-0.062	-0.009	0.100	-0.065	-0.075

Teachers integrating economic concepts into other subject areas correlated significantly with teachers who are integrating computers in the instruction of economic concepts. When asked if teachers were incorporating computers into instruction of economic concepts, those answering no correlated significantly with private schools, which corresponded with private school teachers not having available Internet access in the classroom. Private schools also correlated significantly with teachers reporting very little teacher training and economic concepts. Teachers with very little training in economic concepts correlated significantly with students performing at below grade level. Teachers with moderate training in economic concepts correlated significantly with students performing at grade level and teachers with no training in economic concepts correlated positively with students performing at below grade level. Teachers reported to have extensive training in economic concepts correlated significantly with suburban school types. Teachers reporting little teacher training in economics correlated significantly with teachers who were not integrating economics into other subject areas besides economics.

Students rated as performing below grade level correlated positively with not having computers available in the laboratory. Students performing at grade level correlated with significantly with having computers available in the laboratory. Of special interest was the finding that teachers teaching economic concepts in select classes correlated positively with not having Internet access in the laboratories. It may be assumed, therefore, that teachers who do not have Internet access and laboratories will tend to limit their economic instruction to select classes while those who do have Internet access will tend to provide economic instruction to all of their classes. This finding was further reinforced by the results which shown that suburban schools will tend to have economic instruction taught in all classes, which would correspond to the positive correlation between suburban teachers and available internet access.

Public schools correlated significantly with having available Internet access in the classroom. The public school classification also reported a high correlation with Internet access for personal use that school. Private schools showed a significant correlation with not having available Internet access in the classroom. Rural schools did have a positive correlation with having available Internet access in the classroom and in the lab.

CONCLUSIONS

Ohio has set a goal of connecting it's elementary and secondary classrooms and school library media centers to the information superhighway. With this goal close to being accomplished the focus has now turned to the integration of the Internet into the curriculum. A critical factor at this stage is to provide pre-service and inservice teachers the necessary training to be able to accomplish this task. A 1993 national survey of elementary and secondary educators, who were frequent and experienced users of computers, found that early uses of telecommunications in the schools were self-taught and were limited to computer teachers and media specialists. (Honey & Henriquez, 1993). This has changed in the last few years as school districts and teacher education institutions have prepared in-service and pre-service teachers to better use new technologies such as the Internet. Katz and Becker (1999) feel, "..that the Internet is having an immense impact on virtually all aspects of the teacher and student learning experience, starting with the enriching of their interactions, to data they can now access, and extending to major influences on the environments and the formats in which they use these and other course materials."(p. 198). What can be said from this survey is that it appears that at least 44.7% of Ohio schools have some form of economic instruction and integration with the Internet is occurring however the non-responding 55.3% of the schools surveyed leave open to conjecture whether economic instruction is occurring in the form mandated by Ohio law. Economic instruction may not be as widespread as economic educators would like to believe.

The use of experientially base learning through economic projects versus traditional concept lecture methods, has been an effective way to teach economics. (Kourilsky, 1985) The survey results, which show that teachers not having students involved in economic projects, correlated significantly with students performing below grade level. Teachers who reported having very little training in technology use in the classroom, correlated significantly with teachers not offering economic projects. In turn, teachers having very little training in economic concepts correlated significantly with teachers not doing economic projects with their students. Developing computer and technology user- friendly economic based student projects could be an efficient and effective means to involve students and teachers in low socio-schools to become more involved in economic instruction. The possibility of low-tech project based economic instructional methodologies should not be ignored since many of these schools do not have technology access. Teachers who were not doing economic projects correlated

significantly with teachers reporting that they were not integrating computers into the instruction of economic concepts. Computer access for these teachers may be extremely effective in promoting economic education in their schools.

Teachers with moderate training in economic concepts correlated significantly with students performing at grade level and teachers with no training in economic concepts correlated positively with students performing at below grade level. It is obvious that teacher training in economic concepts is paramount to implementing economic concept instruction. This obvious finding needs further development in the area of gaining support within the business and educational community if economic educators are to be successful in helping those most in need of this type of instruction.

It is not surprising that there was a significant correlation between the non-availability of the Internet in laboratories and schools rated and the low socio-economic status level. The survey does signal a need for economic and state curriculum educators to move aggressively in making teachers knowledgeable about what is available and can be done when access is created. It may be assumed that teachers who do not have Internet access and laboratories will tend to limit their economic instruction to select classes while those who do have Internet access which tend to provide economic instruction to all of their classes.

Overall, it would seem that Economic Education instruction in Ohio is beginning to be integrated with technology and the Internet. It will be incumbent upon economic educators to develop curricula and promote economic education workshops which will encourage teachers and administrators to utilize technology and economic instruction for the benefit to of the students.

If Ohio is any example it may be conjectured, given Ohio's mandates to teach economic education in all of it's high schools, that other states without these mandates may be an even greater need of the melding of technology and Economic Education. It would appear that this integration is currently slower than optimum but the progress is being made. It will take the combined effort of schools, businesses, and university Centers for Economic Education to promote this much-needed combination of technology, the Internet and economics for the benefit of all.

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Appendix 1
Teacher Survey on Economic Concepts Instruction and Technology Use

April 26, 2000

A special offer for needed input. By answering the attached survey and placing it in the enclosed postage paid envelope, The University of Akron Center for Economic Education will send you the following:

1. A list of the easiest and most important concepts to teach.
2. A copy of Chris Farrell's Sound Money Guide to Economic Literacy.
3. A list of organizations to write for free economic finance materials.

Or you may choose to receive a free disk of the most helpful Internet bookmarks for use in Lesson Planning, Student Education, and Personal Finance.

Thank you for your participation and support of Economic Education.

Sincerely,

Dr. Fred M. Carr

✂----------

(May be mailed separately). Enclosed is my completed survey. Please mail my choice below to:

Name:

Address:

Please choose one of the following:

☐ 1. A list of the easiest and most important concepts to teach.
2. A copy of Chris Farrell's Sound Money Guide to Economic Literacy.
3. A list of organizations to write for free economic finance materials.

OR

☐ A free disk of the most helpful Internet bookmarks for use in Lesson Planning, Student Education, and Personal Finance. Disk format desired:
☐ IBM ☐ MAC

1. Socio Demographics
School Name:
School Type: (Check one) ☐ Urban ☐ Public
☐ Suburban ☐ Private
☐ Rural ☐ Parochial

School District:
Grade Level:
Subjects you Teach:

2. I consider my students on average to be: (Check one)
- ☐ Below grade level in subject comprehension
- ☐ At grade level in subject comprehension
- ☐ Above grade level in subject comprehension

3. I consider my school to be in a: (Check one)
- ☐ Low socio-economic status
- ☐ Middle socio-economic status
- ☐ A high socio-economic status

4. My school has computers available: (Check all that apply)
- ☐ In my classroom
- ☐ In labs
- ☐ For personal use
  - ☐ At home ☐ At school

5. My school has Internet access: (Check all that apply)
- ☐ In my classroom
- ☐ In labs
- ☐ For personal use
  - ☐ At home ☐ At school

6. Are you integrating computers into instruction of economic concepts?
- ☐ Yes ☐ No

7. Have you had training in technology use in the classroom: (Check one)
- ☐ Extensively ☐ A moderate amount
- ☐ Very little ☐ None

8. Do you teach economic concepts: (Check one)
- ☐ In all of your classes ☐ In select classes

9. Have you had training in teaching economic concepts: (Check one)
- ☐ Extensively ☐ A moderate amount
- ☐ Very little ☐ None

10. How were you assisted in learning how to teach economic concepts?
- ☐ Regional Center for Economics Education
  - Number of courses taken: ☐ 1 ☐ 2 ☐ 3+
- ☐ Junior achievement
- ☐ Self taught ☐ University/College Economics Department
- ☐ University/College of Business

	☐ Other
11.	Number of years in teaching: ☐ 1-4 ☐ 5-8 ☐ 9-14 ☐ 15+
12.	Number of years in teaching Economic concepts: ☐ 1-4 ☐ 5-8 ☐ 9-14 ☐ 15+
13.	Please check all the economic concepts that you teach: ☐ Supply & Demand ☐ Opportunity Costs ☐ Want & needs ☐ Factors of Production ☐ Goods & services ☐ International Trade ☐ Productivity ☐ Wealth Creation ☐ Scarcity ☐ Resources ☐ Others (Please specify) :
14.	Do you have your students do economic projects: ☐ Yes ☐ No If Yes, briefly describe:
15.	Are you integrating economics into other subject areas: ☐ Yes ☐ No Please specify subjects:
Comments about economic instruction you would like to make:	

ECONOMICS ARTICLES