

Sample Quantitative Research Findings

Teachers Discovering Computers – Integrating Technology and Digital Media

The Georgia A+ Education Reform Act mandates that Georgia educators (teachers, administrators, and service personnel) meet a special technology requirement for their certification renewal. The Teachers Discovering Computers (TDC) course is approved by the Georgia Professional Standards Commission (<http://www.gapsc.com>) as an effective online solution to the Georgia special technology requirement. Educators who successfully complete TDC receive certification credit that satisfies Georgia's special technology requirement. In addition, participants earn staff development units for the equivalent of a three semester-hour graduate level course or three semester-hour graduate credits from Armstrong Atlantic State University, Savannah, Georgia.

To pilot the effectiveness of the Teachers Discovering Computers online graduate level course, three school districts were chosen that represent Georgia's diverse population - Fulton County (Atlanta urban area), Troup County (small town) and Emanuel County (rural area). Four hundred and eighteen (418) teachers and administrators began the school-based TDC course and 374 completed all course requirements for a 90% course completion rate. These educators represented 90 schools from the three county region.

Student breakout by curricular level (all classes combined)

170 Elementary School Teachers
71 Middle School Teachers
60 High School Teachers
34 School or District Administrators
39 Instructional or other Support Personnel

Two hundred and seventeen (217) educators completed the online pretest/posttest for a 58% questionnaire return rate. The pretest and posttest surveys included fourteen, five-point Likert items, and the posttest contained five open-ended questions. The fourteen questions were designed to evaluate participants' attitudes and perceptions concerning the value of educational technology and the World Wide Web prior to taking the course and then again at the completion of the course thirteen weeks later. The reliability coefficient of the pretest is .8806 and the reliability coefficient for the posttest is .9248. Listed below are a few of the educational technology topics covered in the survey instrument about which the teachers and administrators attitudes and perceptions were compared in the pretest and posttest statistical analysis:

- Difficulty of *using* computers in his or her classroom or curriculum area.
- Difficulty of *integrating* technology in his or her classroom or curricular area
- Critically important for teachers to learn how to *use* technology
- Critically important for teachers to learn how to *integrate* technology
- Properly *integrated* technology can revolutionize teaching or learning
- Teaching can be dramatically enhanced by integrating technology
- Student learning can be dramatically enhanced by technology integration
- By integrating technology and becoming facilitators of learning, teachers can significantly improve student learning
- The World Wide Web has the potential to revolutionize *teaching*

- The World Wide Web has the potential to revolutionize *learning*
- Teachers can learn how to effectively use and integrate technology in a one semester 100% online course

There were 217 participants who completed both the pretest and posttest and a Pair wise T test was used for the analysis. The quantitative data analysis reveals there is a statistically significant difference between the mean scores of the pretest and posttest scale scores from the Teachers Discovering Computers course. The pretest mean was 29.00 with a standard deviation of 7.65, while the posttest mean was 26.50 with a standard deviation of 9.74 (Table 1). These results yield a significance level of .000 thereby indicating a strong treatment effect (see Table 3). With the correlation between the two scores being .448, little relationship is seen between the pretest and posttest scores (Table 2). This leads the researcher to conclude that the impact of the course on the educators' perception and integration of technology into the curriculum is dramatic.

TABLE 1
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRESCORE	29.00	217	7.65	.519
	PSTSCORE	26.50	217	9.74	.661

TABLE 2
Paired Samples Correlation

		N	Correlation	Sig.
Pair 1	PRESCORE & PSTSCORE	217	.448	.000

TABLE 3
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRESCORE- PSTSCORE	2.50	9.31	.632	1.26	3.75	3.967	216	.000

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