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ABSTRACT

This study examined recent (1995-1998) education students' exposure to a variety of instructional technologies prior to taking a required instructional technology course. The purpose was to identify how frequently students had used various technologies before entering the required course and to identify longitudinal changes and/or trends in experience levels. Participants were preservice and inservice teachers attending a mid-sized, public, southern state university. Between 1995-1998, during the first class meeting, 606 undergraduate and graduate students enrolled in different sections of required introductory instructional technology courses completed surveys indicating how frequently they had utilized various instructional technologies prior to beginning the course. Data analysis indicated that students had more experience with word processing than any other technology upon entry, and they seldom or never used spreadsheets and databases. Experience with information tools (e.g., e-mail, CD-ROM, and the Internet) ranged from seldom to often. By 1998, students reported having more prior experience with e-mail, CD-ROM, and the Internet than they did in 1995. Degree of prior experience varied significantly between groups over time and did not always move in a positive direction. (Contains 17 references.) (SM)

Developing Instructional Technology Curricula for Pre-Service Teachers:

A Longitudinal Assessment of Entry Skills

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Paper presented at the annual meeting of the
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Developing Instructional Technology Curricula for Pre-Service & In-Service Teachers: A Longitudinal Assessment of Entry Skills

The importance of and need for P-12 educators with strong instructional technology skills has been well documented (U. S. Congress OTA, 1995). Continued emphasis on the development of critical thinking and problem-solving skills in P-12 students, as well as the rapid expansion of technology-based information resources, have increased the demand for technology-fluent teachers. However, P-12 administrators continue to complain about the difficulty of finding teachers with the required technology expertise (Ketcham, 1996; Ponessa, 1996). Particularly distressing are reports that many Colleges of Education graduate pre-service teachers who lack basic technology skills. Few new teachers are prepared to effectively integrate technology into classrooms and other learning environments to support student learning (Barksdale, 1996; Bentley, 1994; Northrup, 1996; Roblyer, 1994; U. S. Congress OTA, 1995; Wild, 1996).

In an attempt to address these concerns, the National Council for the Accreditation of Teacher Education (1992) and the International Society for Technology and Education (1993) have identified standards for pre-service teacher technology competencies. Roblyer (1994) indicates that at least 50% of all teacher preparation programs require undergraduate pre-service teachers to enroll in at least one instructional technology course. Yet, complaints persist that new teachers are unprepared to use technology. Grau (1996) reports that new teachers' inability to use technology effectively may result from the design of technology preparation courses. Northrup (1996) suggests that teachers' technology needs have actually shifted from basic productivity skills to the more sophisticated technology integration skills. Friske (1996) writes that it may be time to change the pre-service technology standards to extend beyond the basics.

Increasing the technology standards for teachers does not negate the need for basic technology skills. Teacher preparation programs must ensure that pre-service teachers possess these competencies as well as technology integration skills. Even though students entering teacher education programs today have had increased exposure to computers and computer software at elementary and secondary schools, such infusion of technology has not been done in a uniform fashion across school districts or even within districts. Differences in students' exposure to, and attitude toward, computer technology may also be dependent upon the students' socio-economic status, or, in the case of returning students, previous work experience. The question becomes: "Do potential teachers entering teacher education programs today have basic technology skills?" Or must these skills be taught in addition to advanced application and integration techniques?

Sheffield (1996) surveyed 772 pre-service teachers between 1991-1995 to determine their proficiency with basic word processing, database, and spreadsheet programs. While the students from the 1994-1995 year had more word processing experience than those from the preceding three years, the overall results revealed that entry-level pre-service teachers (mainly juniors) had minimal experience with basic productivity software applications (word processing, database, spreadsheet). However, Sheffield suggests that the trend of increased experience that surfaced with the 1994-95 sample may continue, and, if so, the curriculum of basic instructional technology courses could shift to more advanced topics such as integrating technology into the curriculum.

This study followed up on Sheffield's research and examined recent (1995-1998) education students' exposure to a variety of instructional technologies prior to taking a required instructional technology course. The purpose of the research was to identify how frequently students had used various technologies before entering a required instructional technology course, and to identify longitudinal changes and/or trends in the experience levels. The implication of these findings for the development of instructional technology curricula for pre-service teachers was also examined.

Method

Pre-service and in-service educators at a middle sized, public, southern state university (enrollment approximately 8800) with one of the nation's largest initial teacher preparation programs (Sethna, 1996) participated in the study. Undergraduate and graduate students enrolling in sections of required introductory instructional technology courses taught by the researchers between fall quarter, 1995 and winter quarter, 1998 completed surveys indicating how frequently they had utilized a variety of instructional technologies prior to the beginning of the course.

Six hundred and six students, representing the total enrollment of sixteen sections of instructional technology courses taught by the researchers between fall, 1995 and winter, 1998 completed surveys. Students were enrolled in one of four courses: a technology/curriculum course required for secondary education/certification majors; a technology/curriculum course required for P-12 education/certification majors; or an introductory instructional technology or computer utilization course required for elementary education/certification majors, middle grades education/certification majors, and other undergraduate and graduate education students. The surveys were administered during the first class meeting by the researchers. Students were informed that the survey was a needs assessment instrument and that the results of the study would be used to help shape the course. Surveys were also administered to students who added the class following the first class meeting. Table 1 summarizes the number of surveys administered each quarter.

Table 1
<u>Survey Responses</u>

	Fall 1995	Winter 1996	Spring 1996	Summer 1996	Fall 1996	Summer 1997	Fall 1997	Winter 1998	Total
Under-grads	57	70	21	27	62	22	64	48	371
Grads	36	16	28	39	21	37	32	26	235
Total	93	86	49	66	83	59	96	74	606

The one-page survey collected student enrollment level (undergraduate or graduate), and required respondents to indicate how frequently they had used a variety of 14 old and new technologies such as word processing, spreadsheets, databases, e-mail, the World Wide Web (WWW), CD-ROM, etc. A 5-point Likert scale (1=never, 2=seldom, 3=sometimes, 4=often, 5=a great deal) was used to collect student responses. Technologies included on the survey were identified after a review of instructional technology literature (ISTE, 1993; NCATE, 1992), instructional technology texts (Heinich, Molenda, Russell, 1993; Kemp & Smellie, 1994; Teague, Rogers & Tipling, 1994), and needs assessment instruments used in similar courses at two other universities. The survey was finalized after several instructional technology instructors at the originating institution reviewed it.

Results

Survey responses were compiled and entered into SPSS for statistical analysis. In addition to the skill frequency responses, the quarter of enrollment in the instructional technology course and undergraduate or graduate status of the student were also entered. Since changes in student entry skills over time were the focus of the study, the data was analyzed using quarter of enrollment and student level (undergraduate or graduate) as independent variables. Six instructional technology skills were selected for analysis in this study. The three productivity tools; word processing, spreadsheet, and database; examined by Sheffield (1996) were targeted, as were three communication and information access tools; CD-ROM, e-mail, and WWW. Thus the dependent variables for this study were student frequency responses on these six instructional technology skill items.

The mean and standard deviation for each of the six dependent variables were computed for the undergraduate and graduate students each quarter. These are reported in Table 2. Line graphs showing the changes in means over time for skill frequencies are included in Appendix A.

Table 2

Mean Scores for Student Reported Prior Instructional Technology Experience

		Fall 1995	Winter 1996	Spring 1996	Summer 1996	Fall 1996	Summer 1997	Fall 1997	Winter 1998
Undergraduate	M	3.702	3.500	3.381	3.222	3.565	4.182	3.813	3.500
Word Processing	(SD)	(1.117)	(1.164)	(1.532)	(1.281)	(1.276)	(1.097)	(1.052)	(1.111)
Graduate	M	4.000	3.688	3.571	3.538	4.048	3.676	4.219	3.654
Word Processing	(SD)	(1.287)	(1.078)	(0.879)	(1.120)	(1.161)	(1.248)	(0.792)	(1.384)
Undergraduate	M	2.035	1.629	1.905	1.593	2.177	2.364	2.047	1.667
Database	(SD)	(1.117)	(0.966)	(1.091)	(0.747)	(1.064)	(1.293)	(0.950)	(0.953)
Graduate	M	2.278	1.813	1.679	1.897	2.667	1.946	2.563	2.154
Database	(SD)	(1.233)	(0.834)	(1.188)	(1.071)	(1.390)	(1.053)	(0.948)	(1.317)
Undergraduate	M	1.877	1.443	1.857	1.481	1.919	2.000	1.766	1.604
Spreadsheet	(SD)	(1.103)	(0.673)	(0.964)	(0.802)	(1.135)	(1.195)	(0.792)	(0.736)
Graduate	M	2.639	1.563	1.500	1.846	2.905	2.000	2.469	2.000
Spreadsheet	(SD)	(1.457)	(0.814)	(0.923)	(1.014)	(1.546)	(1.179)	(1.164)	(1.200)
Undergraduate	M	2.158	1.957	2.476	1.815	2.258	2.773	2.766	2.313
CD-ROM	(SD)	(1.192)	(1.290)	(1.365)	(1.039)	(1.330)	(1.541)	(1.377)	(1.371)
Graduate	M	2.194	2.188	2.393	2.769	2.619	3.216	3.094	3.500
CD-ROM	(SD)	(1.117)	(1.471)	(0.994)	(1.224)	(1.465)	(1.417)	(1.329)	(1.421)
Undergraduate	M	2.298	1.357	1.810	1.630	3.177	2.409	3.203	2.458
Email	(SD)	(1.281)	(0.723)	(0.873)	(0.967)	(1.477)	(1.736)	(1.471)	(1.414)
Graduate	M	2.361	1.563	1.607	1.641	2.810	2.568	3.063	3.154
Email	(SD)	(1.437)	(1.263)	(1.166)	(0.873)	(1.806)	(1.405)	(1.366)	(1.759)
Undergraduate	M	2.298	1.214	1.667	1.630	3.161	2.682	3.594	2.833
WWW	(SD)	(1.281)	(0.720)	(0.966)	(0.967)	(1.231)	(1.555)	(1.269)	(1.243)
Graduate	M	2.361	1.375	1.321	1.744	2.667	2.486	3.250	2.769
WWW	(SD)	(1.437)	(0.885)	(0.863)	(1.044)	(1.390)	(1.346)	(1.107)	(1.531)

A simple factorial Analysis of Variance (ANOVA) was used to determine if there was any significant difference in the prior technology experiences reported by the different groups of students. An ANOVA was run for each dependent variable using the two independent variables as factors. Because six dependent variables were examined, the alpha level for each of the six ANOVAs was chosen by using the Bonferoni Inequality. To maintain a familywise Type I error rate of .05, the probability of making a Type I error for each of the six tests had to be less than .0083 (.05 divided by number of ANOVAS) for the results to be considered significant. The ANOVA tables are included in Appendix B. Significant effects ($p<.008$) for quarter of enrollment were found for database ($p=.000$), spreadsheet ($p=.000$), CD-ROM ($p=.000$), Email ($p=.000$), and WWW ($p=.000$). Significant effects for student level were found for spreadsheet ($p=.000$), and CD-ROM ($p=.000$). No significant interaction effects were detected.

A number of cautions must be kept in mind when reviewing this data. First, the researchers did not teach any of the instructional technology introductory courses during the winter and spring 1997 quarters, so there was a two-quarter gap in the data collection process. Second, due to enrollment patterns, the cell sizes are not equal and this constitutes a threat to the ANOVA. Finally, some of the standard deviations for the frequency means in each cell are large and this, too, threatens the ANOVA. However, some interesting patterns did arise as these results were reviewed.

Discussion

The purpose of this study was to:

- identify how frequently students had used various technologies before entering a required instructional technology course, and
- identify longitudinal changes and or trends in students' experiences prior to entering such a course.

Review of the frequency means for each of the dependent variables examined in this study showed that education students at this institution consistently had more experience with word processing than any other technology tool when they entered introductory instructional technology courses (see Figure 1, Appendix A). Both undergraduate and graduate students indicated that they used word processing "sometimes" or "often" before beginning the course. However, students generally indicated that they "seldom" or "never" used spreadsheets and databases (see Figure 2, Appendix A). Experience with information tools such as e-mail, CD-ROM, and the WWW fell in the middle ranging from "seldom" used to "sometimes" or "often" (see Figure 3, Appendix A). It is important to note that the standard deviations for many of the group means were large.

Students enrolling between fall 1995 and summer 1996, indicated that word processing was the only technology they used at least "sometimes." In the fall of 1996, in addition to graduate and undergraduate word processing exposure, undergraduates indicated they used e-mail and the WWW, at least "sometimes." Graduates indicated they used CD-ROMs at least "sometimes" during the summer of 1997, along with the undergraduate and graduate at least "sometimes" use of word processing. Fall 1997 students continued to use word processing, but graduates reported they at least "sometimes" used CD-ROM, e-mail, and the WWW, while undergraduates at least "sometimes" used e-mail and the WWW. All students used word processing at least "sometimes" in winter 1998, and graduate students used CD-ROM and e-mail at least "sometimes." These findings suggested that students enter introductory technology classes today with more prior exposure or experience to some technologies than their counterparts had in 1995. However, these increased experiences were limited to information access and communication technology applications, not production tool technologies such as database and spreadsheet.

The analysis of variance for word processing indicated no significant difference in students' word processing experience prior to enrolling in a required technology course when viewed by quarter of enrollment or undergraduate/graduate student level. Even though the differences were not significant, a review of the means (Appendix A, figure 2) showed a varied pattern of increases and decreases, although the fall quarter means were generally highest. For the most part, the undergraduate and graduate means followed a similar pattern. It should also be noted that the standard deviations for these means were frequently over 1 (on a 5-point scale).

A significant difference in prior database and spreadsheet experience was detected by the analysis of variance for quarter of enrollment. However, the differences were not longitudinally linear. The fall quarter database and spreadsheet scores were always highest, followed by drops in database and spreadsheet scores during the other quarters (see Appendix A, Figure 2). This may suggest that students' prior experiences varied according to their specific major. For instance, secondary education majors (math, science, language arts, social studies, and business education) always took their technology course in the fall quarter. These students may have been more likely to use spreadsheet or database applications than P-12 majors (art, music, foreign language, and P.E.) who took the course in the winter quarter. Furthermore, the graduate mean responses for both spreadsheet and database were usually higher than the undergraduate mean responses for these applications, although the difference was only significant for the spreadsheet application. Again, the standard deviations for many of the spreadsheet and database group means were over 1 (on a 5 point scale).

The analysis of variance for all three information access and communication technologies showed significant differences by quarter in students' prior experience. In all three information technology applications, an overall increase in prior experience between fall, 1995 and winter, 1998 could be seen from the means graph (Appendix A, Figure 3). However, it should be noted that there were occasional drops in means (i.e., e-mail and WWW exposure between fall, 1995 and winter, 1996; undergraduate CD-ROM use between spring and summer, 1996; e-mail and WWW experience between fall, 1996 and summer, 1997; graduate and undergraduate WWW experience between fall, 1997 and winter, 1998; and undergraduate e-mail and CD-ROM experience between fall, 1997 and winter, 1998). These drops may have been due to differences in student majors (Secondary education, P-12, etc.) as suggested in the discussion about spreadsheet and database experience.

Student level (graduate or undergraduate) was a significant source of difference for prior CD-ROM experience. Although graduate and undergraduate students occasionally reported similar prior experience levels for CD-ROMs (fall, 1995; spring, 1996), more frequently the graduate means were higher by about 0.5 (out of 5). During summer 1996, and winter, 1998 the graduate means were higher by an average of 1.0 (out of 5).

Many of these results echoed Sheffield's (1996) findings about pre-service teachers' technology experiences. Sheffield found that 1991-1995 pre-service teachers had more word processing experience than other technology applications skills, and that was also true for the 1995-1998 students investigated in this study. However, while Sheffield found that the 1991-1995 students had minimal experience with word processing, database, and spreadsheet applications; this study found that the 1995-1998 students had some degree of word processing experience, although their prior experience with spreadsheet and database continued to be minimal. This study also suggested that students' prior experience with information access technologies (CD-ROM, e-mail, and WWW) had increased so that most students had some degree of exposure to these technologies prior to entering introductory technology courses.

Implications

The findings of this study generally supported Sheffield's prediction that pre-service teachers' technology experience prior to enrolling in introductory instructional technology courses may be increasing. The study showed that most education students had some experience with word processing and basic information access and communication technologies such as e-mail. However, it should be noted that the degree of prior experience varied significantly between groups by quarter and did not always move in a positive direction. Also, the standard deviations for reported prior experiences were frequently large suggesting that degree of prior experience varied within groups. While this study did not examine the effect major area of concentration had on prior experience, the preliminary findings suggested a hypothesis that a student's major may be a factor in the level of prior technology experience. If this is the case, then the curricula may need to be tailored to individual major cohort groups. The study also showed that database and spreadsheet experience continued to be minimal.

There are several curricular implications of the study. First, some students may be entering instructional technology courses with more experience in word processing and information access and communication applications than their counterparts had in the past. In these cases, instructors may be able to address higher level utilization and integration skills without covering basic skills. For information access technologies, courses might focus on evaluating Internet resources as well as exploring ways to effectively integrate the resources into the curriculum. For most students, basic instruction in productivity skills other than word processing will still be required.

However, instructors should not be too quick too assume that increased experience or exposure to technology applications translates into increased skills. Students who have frequently used technology applications such as word processing may be using the computer as a typewriter and may be unaware of or lack proficiency in word processing tools such as cutting, pasting, tables, columns, etc. Students with a good deal of Internet exposure may be experienced with using the Netscape or Explorer browsers, but may have little experience in effective Internet search strategies using search engines.

Furthermore, the large standard deviations within groups, and the varying directional changes in means between groups suggests that skills may vary in both positive and negative directions over time and within groups. While the suggestion that skill levels may vary according to subject major needs further research, if this is the case, using a needs assessment to determine appropriate instructional technology content for individual classes and students is critical. Different levels of instruction may need to be provided within one class. However, contrary to Sheffield's suggestion, we would recommend that integration of technology into the classroom be addressed at all levels of instruction.

Longitudinal research should continue to monitor pre-service teachers' technology skills to provide insight into general trends and changes for the purpose of curriculum development. This study examined students' prior technology experience looking at the factors of time and student level. Future research should also look at student major area of concentration as a potential factor that can affect technology experience.

References

Barksdale, J. M. (1996). New teachers: Unplugged. Electronic Learning, 15(5), 38-45.

Bentley, C. (1994, Oct.). Are pre-service teachers acquiring skills in educational technology, how and where? Results of a national survey. Paper presented at the Annual Meeting of the Mid-Western Educational Research Association, Chicago, IL, October 13-15, 1994.

Friske, J. (1996). ISTE's technology foundation standards for all teachers: Time for a second look? Journal of Computing in Teacher Education, 12(2), 9-12.

Grau, I., IV. (1996). Teacher development in technology instruction: Does computer coursework transfer into actual teaching practice? Paper presented at the Annual Meeting of the Southwest Educational Research Association, Dallas, TX, January 25, 1996.

Heinich, R., Molenda, M., & Russell, J. (1993). Instructional media and the new technologies of instruction (4th ed). New York: Macmillan.

International Society for Technology and Education. (1993). Curriculum guidelines for accreditation of educational computing and technology programs. Eugene, OR: ISTE.

Kemp, J. E., & Smellie, D. (1994). Planning, producing, and using instructional technologies. New York: Harper Collins.

Ketcham, S. (1996). Use your hiring power. Electronic Learning, 15(5), 24-25.

National Council for the Accreditation of Teacher Education. (1992). NCATE approved curriculum guidelines. Washington, DC: NCATE.

Northrup, P. T. (1996). Establishing instructional technology benchmarks for teacher preparation programs. Journal of Teacher Education, 47(3), 213-222.

Ponessa, J. (1996, July 10). Demand for technology-savvy workers falling short of supply. Education Week, 15(40), 1, 17.

Roblyer, M. D. (1994). Creating technology using teachers: A model for pre-service technology training. Report of a Florida DOE-funded project, Tallahassee, FL.

Sethna, B. (1996, Dec.). Dreams for the College of Education, Gatherings, 10, 2. Carrollton, GA: State University of West Georgia, College of Education.

Sheffield, C. J. (1996). An examination of self-reported computer literacy skills of preservice teachers. Action in Teacher Education, 17(4), 45-52.

Teague, F. A., Rogers, D. W., & Tipling, R. N. (1994). Instructional technology. Dubuque, IA: Kendall Hunt.

United States Congress, Office of Technology Assessment. (1995). Teachers & technology: Making the connection. Washington, DC: U.S. Government Printing Office.

Wild, M. (1996). Technology refusal: Rationalising the failure of student and beginning teachers to use computers. British Journal of Educational Technology, 27(2), 134-43.

Appendix A

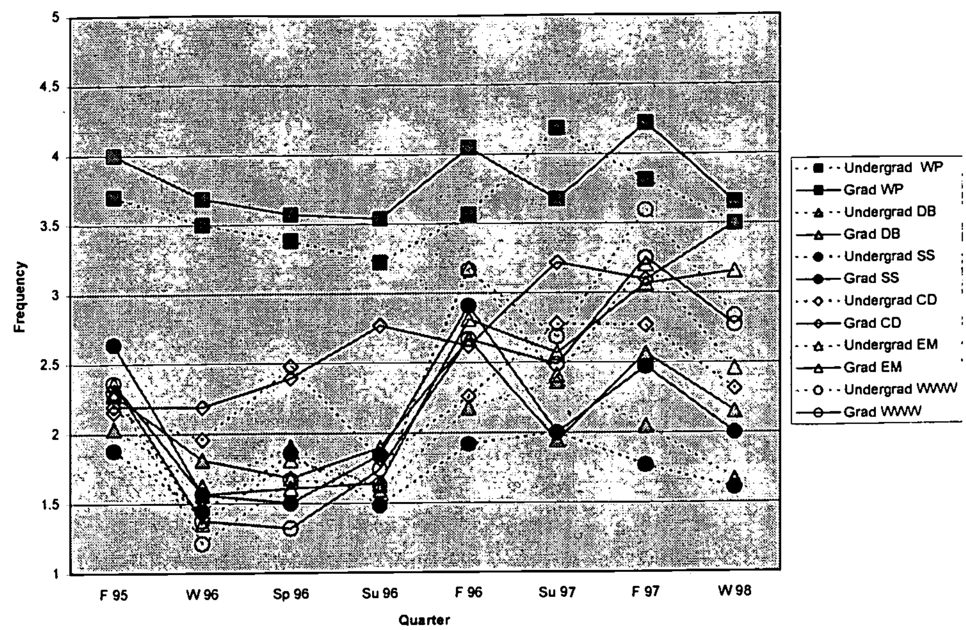

Figure 1. Prior experience means by technology, quarter of enrollment, & student level.

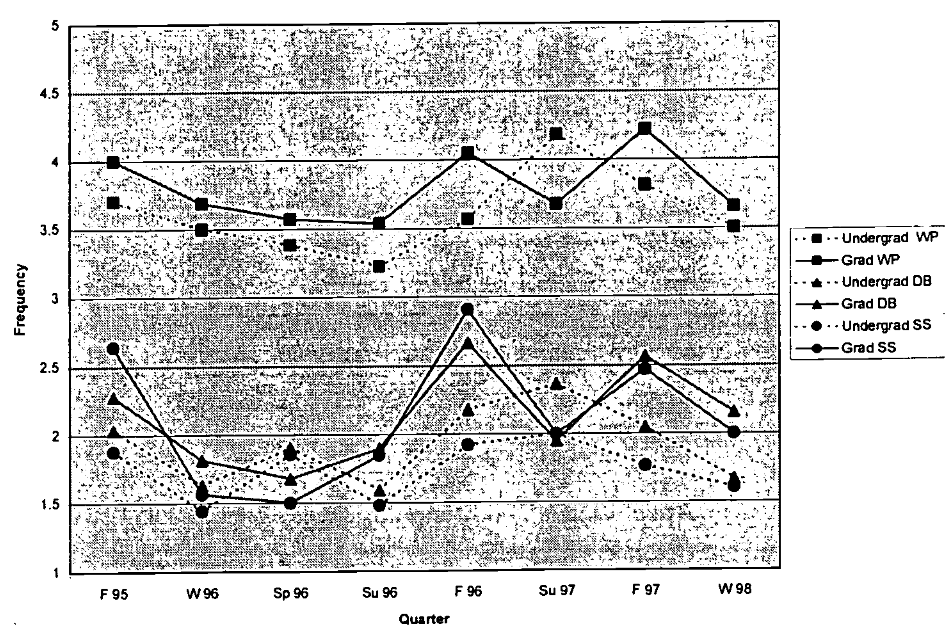

Figure 2. Prior productivity technology experience means by technology, quarter of enrollment, & student level.

Appendix A (continued)

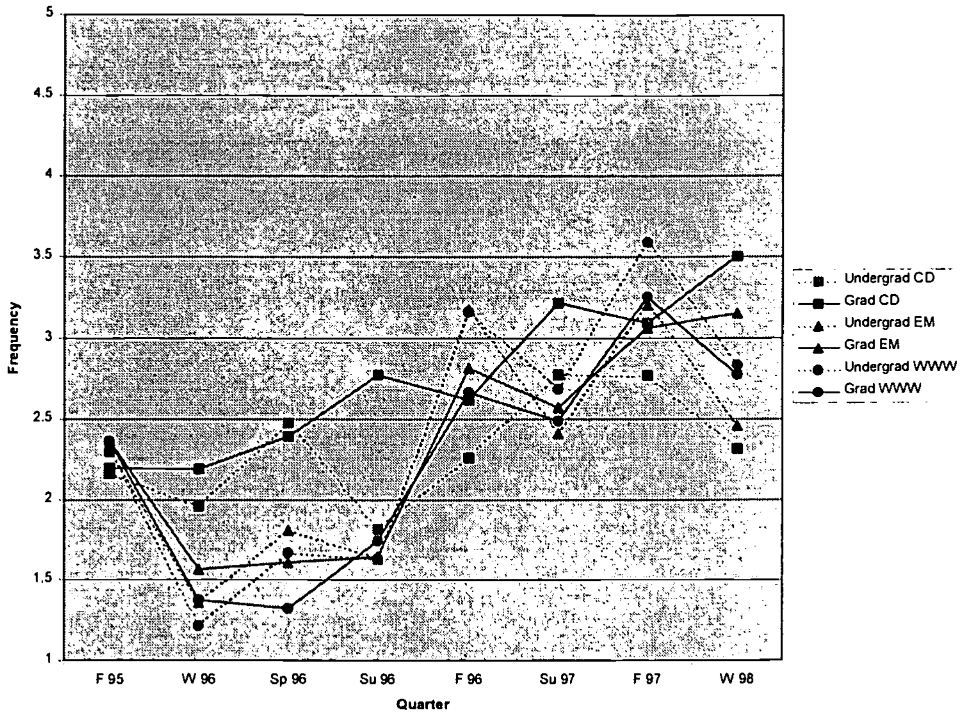

Figure 3. Prior information technology experience means by technology, quarter of enrollment, & student level.

Appendix B

Analysis of Variance for Prior Technology Experience

Source of Variation	df	MS	F	p
Word Processing (Main)	8	3.539	2.611	.008
Enrollment Quarter	7	3.462	2.554	.013
Student Level (U/G)	1	4.582	3.381	.066
Interaction	7	1.354	.999	.431
Database (Main)	8	4.503	3.956	.000*
Enrollment Quarter	7	4.562	4.008	.000*
Student Level (U/G)	1	4.888	4.295	.039
Interaction	7	1.758	1.545	.149
Spreadsheet (Main)	8	7.748	7.252	.000*
Enrollment Quarter	7	6.402	5.992	.000*
Student Level (U/G)	1	17.316	16.207	.000*
Interaction	7	2.883	2.698	.009
CD-ROM (Main)	8	11.930	7.001	.000*
Enrollment Quarter	7	8.798	5.163	.000*
Student Level (U/G)	1	23.424	13.746	.000*
Interaction	7	3.065	1.799	.085
E-mail (Main)	8	23.279	13.365	.000*
Enrollment Quarter	7	26.599	15.271	.000*
Student Level (U/G)	1	.350	.201	.654
Interaction	7	1.687	.969	.453
WWW (Main)	8	32.421	22.934	.000*
Enrollment Quarter	7	36.335	25.703	.000*
Student Level (U/G)	1	2.394	1.693	.194
Interaction	7	.945	.669	.699

*significant for p<.008

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