

Redesigning Introductory Spanish: Increased Enrollment, Online Management, Cost Reduction, and Effects on Student Learning

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Abstract: *Redesign of a beginning Spanish program allowed for an enrollment increase of 85%, lowered cost per student by 29%, and provided a 9% pay raise to the course instructors. Class sizes were reduced from 30 students per section to 25 per section and seat time was reduced from 200 minutes per week to 130 per week. In-class instruction was supplemented with automated, online homework exercises and computer-mediated communication (CMC). The online components were distributed through a WebCT course Web site. Implementation occurred over a period of 2 years. This study examines whether the redesigned program was able to maintain student learning outcomes. The resulting student retention rates, successful course completion rates, and scores on the Brigham Young University Web-based Computerized Adaptive Placement Exam (BYU WebCAPE) were comparable to those of prior instruction, but the redesign had questionable effects on proficiency.*

Key words: *cost, enrollment, online, outcomes, redesign*

Language: *Spanish*

Introduction

This study describes the implementation and assessment of a technology-enhanced first-year Spanish program at Portland State University. The program included three courses (Spanish 101, 102, 103) taught in quarters. In the new program model, students met face to face 130 minutes each week, instead of the previous 200 minutes per week, and section sizes were limited to 25 students, rather than the previous limit of 30. Online homework assignments included reading, listening, vocabulary, and grammar activities. Class meetings were also supplemented with out-of-class computer-mediated communication (CMC). The redesign was implemented gradually over a period of 2 years.

The goals of the program redesign were to improve instruction, maintain learning outcomes, serve more students, reduce costs, and reduce seat time. Demand for enrollment in beginning Spanish at the university was straining the personnel and financial resources available. Without the new program design, section sizes would have increased and many students would have been turned away. This study examined whether the combination of technologies employed and the course design were effective in maintaining student learning outcomes.

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Survey of Literature

In contrast with previous generations' expectations that machines would replace instructors (see Salaberry, 2001), researchers today present a balanced assessment which underscores the essential skills of language teachers in technologically rich learning environments (see Garrett, 1989, 1991; Pusack & Otto, 1997; Salaberry, 2001; Warschauer, 1997). In the present study, technology was integrated based on the indications of existing research on computer-assisted language learning and instruction. The experimental treatment was also designed to generate cost and space savings as these were institutional imperatives. The survey of literature therefore includes considerations of cost effectiveness. Cost is not a conventional criterion in studies of language instruction and acquisition, but cost is a concern for many language programs and is often a barrier to pedagogical transformation.

Two types of available online technology were identified as effective for improving learning outcomes and instructional efficiency. CMC was indicated by existing research to be effective for improving oral performance. Additionally, it could be used outside of class time. Online automated workbooks were highly efficient for grading and grade recording. They could also provide instant feedback. A WebCT course Web site was included in the curriculum because of its capacity to host mechanical and meaningful drills (à la Paulston, 1972) through its quiz programs, as well as communicative drills and communicative language practice (à la Lee & Van Patten, 1995) through its communication tools. The WebCT course Web site provided efficient ways to monitor student use of CMC and the WebCT quiz software allowed extensive customization of mechanical and meaningful drills.

Computer-Mediated Communication

Case studies have found that CMC increases student production by facilitating greater student participation (Beauvois, 1992; Biesenbach-Lucas & Weasenforth, 2001; Chun, 1994; Kelm, 1992; Kern, 1995; Kiesler, Siegel, & McGuire, 1984; Warschauer, 1996), distributing participation more extensively among students (Beauvois, 1992; Kern, 1995; Warschauer, 1996), encouraging more participation by "shy" students (Beauvois, 1992; Chun, 1994; Kelm, 1992), transferring communicative authority to students (Beauvois, 1992; Chun, 1994; Darhower, 2002; Kern, 1995), reducing anxiety (Chun, 1994; Kern, 1995), developing extended discussion more attuned to student motivation and ability (Weasenforth, Biesenbach-Lucas, & Meloni, 2002), and increasing attention to classmates (Chun, 1994). These effects of CMC are characteristic of student-centered pedagogy and student production in CMC evidences proficiency as defined by the American Council on the Teaching of Foreign Languages (ACTFL, 1999; Chun, 1994).

Threaded CMC discussions (bulletin boards) can be continually facilitated by the instructor as they develop (see Weasenforth et al., 2002) and synchronous CMC (chat) allows additional time for processing input and monitoring output, which Beauvois described as "conversation in slow motion" (1992). Payne and Whitney (2002) explained that this aspect of CMC reduces the "burden on Working Memory" and point out that it is especially beneficial for students with "lower ability to maintain verbal information in the Phonological Loop" (p. 23).

In a comparison of CMC with face-to-face activities, Ittzes Abrams (2003) found that synchronous CMC facilitated significant production gains in follow-up oral discussions. Other researchers who have found improved oral performance as a result of synchronous computer-mediated communication (SCMC) include Beauvois (1998b), Kern (1995), Payne and Whitney (2002), and Warschauer (1996). Ittzes Abrams remarked that "with a mere two SCMC sessions, learners were able to produce significantly more language in a given amount of time than their peers who had practiced in . . . face to face contexts" (p. 164). While there was no significant effect on lexical richness, lexical density, or syntactic complexity, Ittzes Abrams emphasized the improvement in fluency among learners who could "access the necessary lexical items with greater facility and speed" (p. 164).

One of the most salient effects of CMC, as reported by Kiesler et al. (1984), is that it reduces interlocutors' inhibitions. When used in a supportive class atmosphere, the reduced inhibition fostered by CMC should result in greater risk taking, confidence, and collaboration. In fact, Darhower (2002), Feenberg, (1999), and Kern (1995) have found CMC effective in developing learner-learner support networks.

Automated Online Exercises

Computerized exercises have been advocated since the 1960s (see Adams, Morrison, & Reedy, 1968; Curtin, Clayton, & Finch, 1972; Decker, 1976). They have not produced revolutionary improvements in learning outcomes (Garrett, 1991; Kleinman, 1987), but this should not be surprising because the advantages of computer-automated exercises are most obviously instructional. Feustle (2001) summarized their benefit very well: "When properly implemented, these programs all but eliminate the tedium of evaluating and grading student workbooks, thus returning valuable time to teachers to do those things for which their preparation and talents are best suited" (p. 837). While Salaberry (2001) observed that dissatisfaction with the computerization of instructional tasks (i.e., computer-assisted instruction) eventually led to greater interest in CMC and the development of computer-assisted language learning (CALL) as a field of research, the instructional benefits of automated exercises are not trivial.

The focus of automated exercises is on mechanical and meaningful drills (i.e., grammar, vocabulary, and comprehension activities for which correct responses can be anticipated). In this study, WebCT was used to extensively customize and enhance the online quizzes provided by the publisher of the course text *Dos Mundos: En Breve* (Terrell, Andrade, Egtasse, & Muñoz, 2003b). WebCT and similar course management software programs evaluate student responses by comparing them with answer lists that can be customized to allow for multiple responses and to confer partial credit for answers that may contain errors. For example, the paper workbook designed to accompany the course text used in this study, *Cuaderno de Trabajo to Accompany Dos Mundos: En Breve* (Terrell, Andrade, Egtasse, & Muñoz, 2003a), asks students in Chapter 3 “¿Adónde va usted para comer?” [Where do you go to eat?] (p. 73). The answer key in the appendix provides the answers “Voy a un restaurante / a casa.” (p. A33). The CD-ROM version of this workbook—*Electronic Cuaderno de Trabajo to Accompany Dos Mundos: En Breve* (Terrell, Andrade, Egtasse, & Muñoz, 2003c)—only allows the answer “Voy a un restaurante.” In the present study, the answers for this particular question were augmented in the WebCT course Web site to allow students to say they go to a restaurant, go home, go to the cafeteria, or go to a café. Omission of the period, or of the accent on “café” or “cafetería,” only cost them about 10% of the grade for this question. Any answer containing “voy a”, “restaurante”, “casa”, “cafetería” or “café” earned them 50%. Producing the key linguistic features of the answer resulted in at least half-credit. The course Web site contained some questions with over 40 answers for comparison. Some of the answers had to exactly match the students’ responses; others simply had to be contained in the students’ responses. The course coordinator customized the answer lists to assign credit according to the same criteria he would have used when grading paper workbooks.

The flexibility of the WebCT answer banks is an important advancement over paper-based workbooks. Students receive feedback and grades immediately rather than waiting days for their work to be evaluated by an instructor. The combination of immediacy and anticipation of a wide range of student responses, (i.e., interactivity) represents a departure from simple electronic distribution of text-based activities, which is not considered fundamentally superior to print distribution (Maxwell & Garrett, 2002; see also Feenberg, 1999). WebCT and similar software programs also track student time on task and provide performance statistics for the entire class. This information allows instructors to discern at a glance which concepts or forms need to be reviewed by the entire class and which ones need to be reviewed by individual students. The time saved by automated grading and grade recording gave the course instructors more time to focus on facilitating com-

municative language practice by students in class and through CMC. It also allowed the instructors to teach more students.

Cost Effectiveness

Salaberry suggested that one of the four fundamental questions that studies of technology in pedagogy should address is their effect on the “efficient use of human and material resources” (2001, p. 51). He echoes the concerns of Meredith (1983) over costs of materials creation, technology selection, software evaluation, facilities, training, and integration. Unfortunately, studies of the cost effectiveness of integrating technology in education are few and far between (see Atkin, 1970; Fletcher, 1995; Hawley, Fletcher, & Piele, 1986; Levin, 1984), and generally are not articulated to direct research in foreign/second language (L2) methodology. Knight (2000) has presented an interesting labor-saving solution combining large, professor-led plenary meetings with smaller, undergraduate-led practice meetings. While this model appears to have resulted in no significant difference in learning outcomes and the use of undergraduate learning assistants is growing in popularity in other fields, graduate language programs have a pool of instructional assistants with greater linguistic competence than senior undergraduates. Graduate language programs also need to provide avenues of economic support and teaching experience for their graduate students.

Egbert, Paulus, and Nakamichi (2002) found that one of the significant obstacles to the effectiveness of CALL in the classroom was the lack of technology. They suggested that course designs incorporating technology include ways to teach around this obstacle (p. 122). One possibility would be to make greater use of the home computers students may possess as well as computers provided by the institution for the general student population. Web-based activities do not have to be delivered in laboratories specific to language departments or in expensive, computer-equipped classrooms.

One concern about distributing CALL online is the lack of immediate, face-to-face instructor presence. Most foreign language students value instructor presence very highly during interface with online activities (see Darhower, 2002; Pérez, 2003; Stepp-Greany, 2002), but this may be a reflection of the general desire for personal guidance in most language-study tasks. Instructor assistance during online activities most likely takes the form of technical aid, task explanation, and vocabulary and grammar clarification. Before assuming that teachers should be present for online activities, we should perhaps ask if teachers should be present when students complete their paper-based homework and workbook assignments as well.

CMC is place and time independent (Warschauer, 1997), therefore one should not expect that using it in class is more effective than using it out of class. Lee (2002)

included out-of-class chat discussions as part of a third-year college Spanish course that used task-based instruction, and concluded that “CMC is an effective way for learners to negotiate both meaning and form and reinforce their communication skills” (p. 20). Lee emphasized communicative tasks that require personal information exchange (focus on meaning), allow students to select form (linguistic and sociolinguistic competence), and are related to a specific chapter of the course text (grammar and vocabulary reference). In a study on vocabulary growth in synchronous and asynchronous CMC, Pérez (2003) found no significant difference between the effectiveness of instructor supervised, in-class chat sessions, and e-mail journals completed from home, despite the fact that the instructor supplied new vocabulary to the students during the chat sessions. Removing CMC activities from the classroom may be an effective way to foster student collaboration and learning while making more efficient use of resources.

Study

Research Question

Can student learning outcomes be maintained after the integration of CMC, online automated exercises, and the reduction of seat time? The fact that the study included multiple independent variables reflects the magnitude of the crisis the program was facing. Because of skyrocketing demand for beginning Spanish courses, record university enrollment, and decreased state funding of the university, the best available means of enrolling more students at lower cost had to be adopted immediately.

Implementation

The learning outcome goal of the introductory Spanish program in this study was for students to reach the ACTFL Intermediate-Low level for speaking and writing proficiency. The courses placed special emphasis on speaking performance. Traditional course delivery at Portland State University and the new course model each conferred 4 units of credit per quarter. The redesigned courses were implemented over a 2-year period.

Reduced Size/Seat Time Course Model

Traditional instruction in this program had emphasized communicative language practice in class. Practice was supported by in-class grammar, vocabulary, listening, reading, and writing activities, as well as by homework. In the redesign, emphasis on communicative language practice was maintained in face-to-face meetings. Most grammar and vocabulary exercises and all reading and writing activities were moved to the online environment. This is not to say that no reading occurred in class. When it did occur, however, the focus was teaching students how to read (top-down vs. bottom-up, reading contextual cues, skimming and scanning techniques, etc.), not the content of the reading.

Seat time was reduced from 200 minutes per week to 130. Two meeting schedules had been used in traditional instruction; classes met in either three 65-minute sessions per week or in two 100-minute sessions per week. The reduced size/seat time design used two 65-minute class meetings plus student–student and student–teacher contact through CMC. In addition to automated online listening, reading, vocabulary, and grammar exercises, the reduced size/seat time course used CMC to extend communicative practice of Spanish beyond the confines of the classroom. The time expected for completion of the additional online activities was estimated at 70 minutes per week. Additionally, the maximum section size was reduced from 30 students to 25 in order to enhance the quality of contact during face-to-face meetings without overburdening the instructors.

The use of CMC in the course may be described as collaborative because students formed their own chat groups and scheduled times to simultaneously chat online. They were given general topics along with a grammatical focus and text reference, but had authority over the content of their discussions and choice of linguistic form. Students also had to individually post summaries about their chat partners using the online bulletin board. This task required that students exchange sufficient information in chat to be able to write summaries. At the online bulletin board, they could read and comment on one another’s work and on sample compositions posted each week by the instructors. The CMC activities were distributed inasmuch as students were required to locate the computer resources necessary for the assignments. Most students used their own computers at home; others used any of the 700 computers in the university’s general access computer labs. No technology-enhanced class rooms or laboratory reservations were needed for these activities.

Student interaction and compositions were evaluated by instructors using a 10-point grading rubric (Appendix) which focused primarily on communication and secondarily on grammar. Instructors evaluated the chat sessions using transcripts generated by WebCT, and evaluated and responded online to the content of each bulletin board composition. Instructors intervened in class with direct instruction (e.g., discussion, explanation, drills, and/or communicative practice) when significant grammar, vocabulary, or sociolinguistic problems were detected. The time necessary for teachers to evaluate the chat sessions and respond to the bulletin board messages was approximately 70 minutes per week.

The reduced size/seat time course model also included a poster session of group presentations at the end of each quarter. All groups discussed their projects simultaneously, with students taking turns describing their poster board and interviewing students from other groups. The activity allowed for many simultaneous interactions with greater sharing of the floor and of authority, greater student–stu-

dent networking and more dynamic, interpersonal communication than traditional presentations. The poster sessions were a culmination of student collaboration in that the self-selected groups were almost always the chat groups that had worked together during the term. The addition of the poster session and the use of CMC transferred responsibility to students. CMC was intended to compensate for reduced face-to-face contact with collaborative computer-mediated contact. The poster session was designed to be a culmination of student collaboration. Table 1 summarizes the differences between traditional instruction and the reduced size/seat time courses.

Several refinements to the redesign were introduced in the second year of implementation. A different course text with more support materials was adopted. Program-specific instructor training prior to teaching was increased from 8 hours to 21 hours. Students were trained in class on the value of CMC in foreign language study because student attitudes towards technology have a significant role in satisfaction and effectiveness (see Beauvois, 1998a; Jaeglin, 1998; Warschauer, 1996). Examples of student projects were posted online for student viewing.

Personnel

Teachers in the study were provided several benefits, including more pay, less time in class per section, and fewer students per section. The program traditionally employed graduate teaching assistants (GTAs) to teach the courses, but because there were not enough qualified GTAs to teach all sections, part-time instructors were also employed. In traditional instruction, part-time instructors were paid a credit-based salary for each course they taught while GTAs taught one course section per term in return for a complete tuition remission and a stipend prorated to 30% of full-time employment. On occasion, some of the most advanced GTAs would teach two sections of the same course for a stipend corresponding to 45% of full-time employment. The additional compensation was only 50% more because the additional section required no new les-

son preparation and no new preparation of grading methods. The additional section did, however, double the amount of tedious, mechanical grading and recording of student homework, especially workbook activities.

The new course model decreased labor by automating grammar, vocabulary, listening, and reading exercises. The new course design employed GTAs exclusively (with the exception of the researcher, who was the course coordinator) and each was assigned two sections. They were compensated at 49% of full-time employment, giving them a raise of about 9% over the pay for two sections in the traditional program. Because no additional tuition had to be paid when a GTA was assigned a second section, the second section cost approximately 75% less than the initial one.

Assessment

Achievement outcomes were assessed using the Brigham Young University Web-Based Computerized Adaptive Placement Exam (BYU WebCAPE). Proficiency was assessed through Oral Proficiency Interviews (OPIs) and Writing Proficiency Tests (WPTs) designed by ACTFL. Course quality was measured using retention rates and course completion rates (grades A through C- and Pass). The program was also evaluated according to enrollment growth and cost reduction, variables affected by course design and course quality. The university uses a quarter system and courses in the beginning Spanish program were offered in sequence: 101 in fall, 102 in winter, and 103 in spring. Measures were applied in the spring prior to implementation of the new course model and at the end of the second year of implementation.

The BYU WebCAPE measures vocabulary, grammar, and reading comprehension with multiple choice questions drawn from an extensive test bank.¹ The WebCAPE was performed in university computer labs during regularly scheduled class time, was proctored, and took about 40 minutes to complete. It was administered during the next to last week of the 103 course (ninth week).

Table 1

COMPARISON OF TRADITIONAL INSTRUCTION AND EXPERIMENTAL COURSE MODELS

Traditional Instruction Model	Experimental Course Model
* Max. section size of 30 students	* Max. section size of 25 students
* 200 minutes in class per week	* 130 minutes in class per week
* In-class discussion of topics such as daily routines, family members, fashion, etc.	* In-class and online, out-of-class discussion of daily routines, family members, fashion, etc.
* Written homework compositions presenting information from in-class discussion topics	* Online homework compositions (CMC) presenting information from chat discussions
* In-class, group reading assignments on culture with comprehension questions	* Online reading assignments on culture with comprehension quizzes.
	* Presentation of a group project in a poster session at end of each quarter

Proficiency was measured with OPIs and WPTs administered and scored by Language Testing International (LTI), the testing service associated with ACTFL. The protocols for the OPIs and WPTs are property of LTI.² All OPIs were done on campus via telephone at the end of Spanish 103 and were proctored. They were followed immediately by the WPTs, which were also proctored. In the traditional course design, the interviews and writing tests were done the week after finals (eleventh week of the term); in the second year of implementation, they were done in the last (tenth) week of the term. The proficiency tests were administered outside of class time.

Results

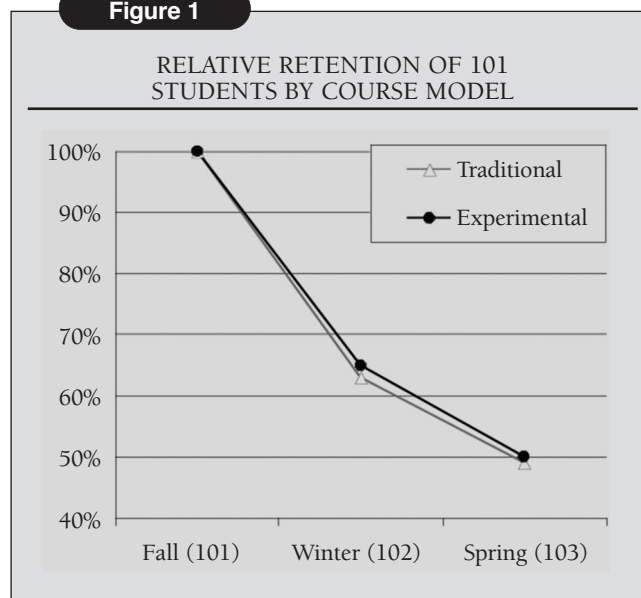
The automated online exercises appeared to function well. As would be expected, students produced some unanticipated correct answers. Students were credited by their instructors for these answers and they were added to the course software for future classes. Instructors saved an estimated 90 minutes per section each week in grading and grade recording. Student use of chat was analyzed using transcripts of the discussions. Students averaged more time on task in electronic chat than was required, used very little first language (L1)³, made very few comments off task, made many socially appropriate comments, employed a wide vocabulary, and exchanged the information necessary for the bulletin board compositions. Using CMC outside of class—thus requiring students to collaborate responsibly in order to complete assignments—appears to have been effective in creating learner–learner relationships. Despite the reduced seat time, the course coordinator (author) felt he had gotten to know his students better than in traditional instruction.

Student Enrollment and Retention

Student demand for the course exceeded the capacity offered in traditional instruction. The institution was not willing to increase capacity without reducing costs. The redesign was successful in that enrollment and retention increased as capacity was expanded. In the second year of implementation, enrollment increased by 85% over traditional instruction.

Figure 1 describes the retention of students who enrolled in each course of the 101-102-103 sequence. Retention of these students throughout the course sequence in traditional instruction and in the redesigned program was comparable. While the official workload did not increase, many students commented that the course required more work than expected. Similar perceptions were found by Stepp-Greany, in whose study (2002) most students agreed that they had invested more time on task in their technology-enhanced language course than they would have in a traditional course.

Figure 1



Course Completion

Successful course completion was measured as the number and percentage of students that received grades of A through C- including Pass, which requires a score equivalent to at least C-. The year-long average of success rates was comparable in traditional instruction and the redesigned program (89% and 87%, respectively). As may be expected, student success was highest at the end of the year—after failing students had been culled in 101 and 102. Successful course completion rates were more stable in the second year of redesign than in traditional instruction. This was an unexpected but welcome finding as it suggests better course consistency. Figure 2 presents rates of successful course completion.

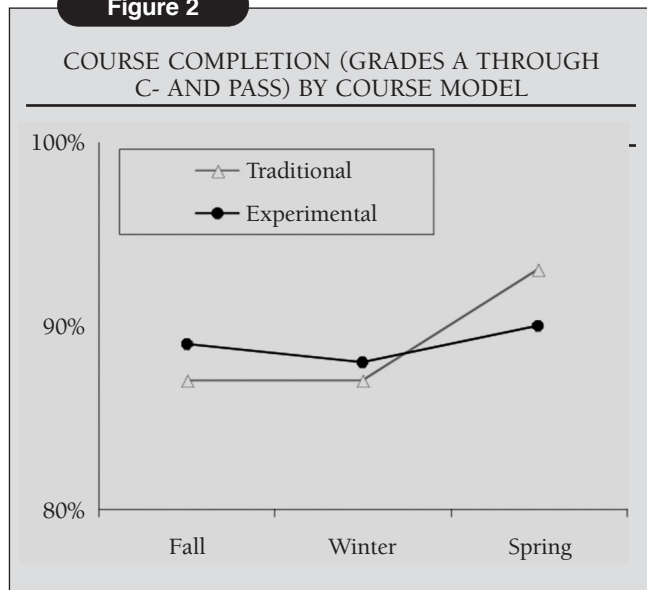
WebCAPE and Proficiency Scores

The performance of students who enrolled in the traditional courses for the entire 101-102-103 sequence was compared with that of students who completed the sequence during the second year of the redesign. These groups are referred to here as cohorts. The mean WebCAPE score increased from 299 in traditional instruction to 301 in the redesigned program. Mean scores are listed in Table 2.

An independent samples *t* test was used to analyze the scores. No significant differences were detected ($p > .05$). The number of samples may differ from the size of the cohorts because some students were absent on the days the test was administered and not all students consented to the use of their data for research.

Proficiency tests were given to volunteers from the traditional Spanish 103 course and the redesigned Spanish 103 course. All of the students who volunteered were tested. Twenty-five students from the traditional program completed an OPI and a WPT. They were, on average, 25 years of age and had 1.6 years prior experience studying Spanish before entering the program. Twenty-three were female and

Figure 2



2 were male. Three were of Hispanic heritage. Thirty-two students completed the proficiency measures at the end of the second year of implementation. They had an average of 1 year prior experience studying Spanish before entering the program. Twenty-four were female, 8 were male, and they were 26 years of age on average. Two were of Hispanic heritage. The sample groups appear to be comparable, with the exception of their prior experience studying Spanish.

Proficiency levels were assigned the following numerical values for statistical analysis: Novice Low = 1; Novice Mid = 2; Novice High = 3; Intermediate Low = 4; Intermediate Mid = 5; Intermediate High = 6. There were no scores above Intermediate High. In this scale, 3.5 would be the dividing point between Novice High and Intermediate Low.

The students from the traditional program completed the year with a mean rating of Intermediate Low in speaking and Intermediate Mid in writing. The reduced size/seat time group showed a mean rating of Intermediate Low in speaking and in writing at the end of the yearlong program. An independent samples *t* test revealed a significant difference between the sets for written proficiency ($p < .01$). Written proficiency results were significantly lower in the second year of implementing the redesign than in traditional instruction. Differences between the sets are described and significant difference is indicated (*) in Table 3.

Table 2

Cohort	N	Mean	SD	Sig.
Traditional	111	299.50	70.75	0.91
Experimental	196	300.65	89.61	

Note. No significant differences detected.

Cost and Space

Course costs include the course coordinator’s salary and benefits, part-time instructor salaries, GTA tuition remissions and stipends, support staff salaries, and course materials. Costs were reduced by assigning two course sections to each GTA. Assigning two sections to each teacher was made possible by using the online workbook instead of paper workbooks, reducing the number of students in each section, and giving the GTAs a raise.

Cost per student enrolled in the traditional course was \$153. Cost per student in the second year of implementation was \$109, 29% lower than traditional instruction. Calculating costs according to the number of students who received a grade of A through C- or Pass reveals a cost of \$174 per successful student in the traditional program and \$120 in the redesigned program, for a decrease of 28%. Classroom space used by each section was reduced 33% by eliminating 65 minutes per week of face-to-face meetings and supplementing the course with CMC activities. Saving classroom space was an institutional imperative, but an appraisal of the value of the space saved is not available.

Conclusion

The redesign was most successful in increasing enrollment opportunity and reducing cost per student. In this sense, the experimental courses helped the program overcome its most immediate obstacles: those of rapidly rising enrollments and costs, a limited pool of qualified instructors, and limited classroom space. WebCAPE scores and successful completion rates were barely affected, suggesting the redesigned courses maintained student achievement outcomes. Although the program continued to meet its goal of Intermediate-Low proficiency in speaking and writing, the outcomes cast doubt on the redesign’s success. Proficiency worsened, especially writing proficiency. Figure 3 summarizes the effects in comparison with traditional instruction.

Discussion

Although proficiency should not be the sole measure of success, it is an important one. The fact that proficiency rates were lower after 2 years of implementing the new course design suggests that student learning outcomes may

Table 3

Test	Cohort	N	Mean	SD	Level	Sig.
OPI	Traditional	25	4.00	1.08	IL	.278
	Experimental	32	3.69	1.06	IL	
WPT	Traditional	25	4.56	0.71	IM	.001*
	Experimental	32	3.75	0.95	IL	

*Significant difference
Note. IL = Intermediate Low; IM = Intermediate Mid

have been influenced by key aspects of the course redesign. Online coursework in and of itself is not indicative of changes in learning outcomes. Garrett (1989, 1991) pointed out that sweeping justifications or condemnations of technology use in foreign language courses are not tenable because pedagogically successful use of technology depends on too many factors (see also Maxwell & Garrett, 2002). The way in which technology was used in this program corresponds to the indications of existing research for improved learning outcomes and increased instructional efficiency. Reduced seat time may have influenced lower proficiency scores in the redesign. The fact that the remaining seat time focused on speaking performance may explain why oral proficiency was not affected as much as writing proficiency. Use of CMC may also have reinforced oral skills, as is suggested by previous research.

Proficiency rates may also have been affected by prior student and teacher experience. The groups of students who participated in proficiency testing had different levels of prior Spanish study. The students who received traditional instruction had 1.6 years prior experience studying Spanish whereas the experimental group had 1 year of prior Spanish study. The instructors from the traditional instruction program (excluding the researcher) had an average of 2.9 years prior experience teaching Spanish as a foreign language. They included 5 nonnative speakers (3 men and 2 women) and 2 native speakers (both women). In the redesigned courses, GTAs were employed exclusively and they began with an average .4 years of prior experience. Six were nonnative speakers (1 man and 5 women) and 3 were native speakers (all women). While most of the "traditional" instructors had 2 or more years prior experience teaching Spanish as a foreign language, all 9 instructors for the experimental courses had only 1 year or less prior experience. It seems reasonable that an 86% decrease in instructor experience would have an effect on proficiency outcomes.

The possible influence of reduced instructor experience was not anticipated when the decision was made to

employ GTAs exclusively. Because the institution offers only a master's degree in Spanish, GTAs are limited to 2 years of teaching eligibility. Nonetheless, it should be remembered that the program had striven to employ only GTAs in the past, but had been unable to meet demand because of the limited pool of graduate students qualified to teach. Employing experienced, part-time instructors the last year of traditional instruction may have contributed to high base-line proficiency outcomes.

Limitations

Assessing specific processes of learning and acquisition was prevented by the number of independent variables. It was difficult to ascertain which elements of the experimental treatment were most successful and which were responsible for lower proficiency outcomes. There were also many different instructors (18) and students (1,278) in the courses during the study, increasing the number of variables and lowering rates of student participation in the research. Despite these difficulties, more research on full-scale, programmatic implementation of technology-enhanced courses is needed.

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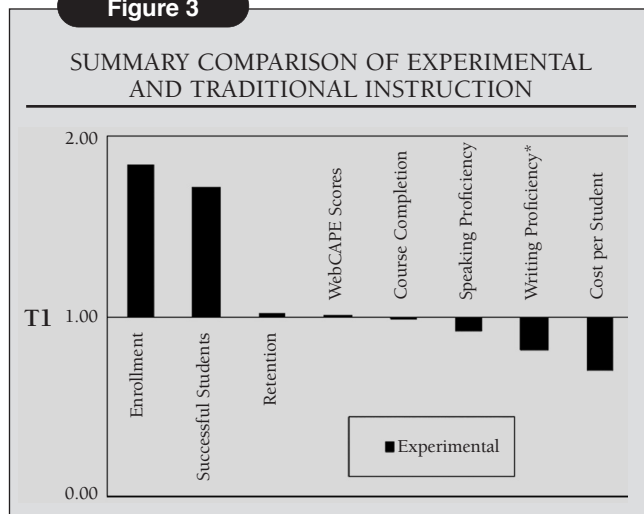
Notes

1. The BYU WebCAPE can be viewed by request at <http://webcape.byu.edu/Docs/cover.html>.
2. Consult <http://www.actfl.org> for more information.
3. This finding confirms reports by Beauvois (1992, 1997) and Darhower (2002). See also Kelm (1992).

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Figure 3



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Appendix

Scoring Rubric for Student Participation

8-10 = The student:

- a. communicates very well in discussion contexts
- b. never uses English in discussion, pair or group activities, or when asking questions
- c. responds fully, voluntarily elaborates on answers, and elicits discussion from partners by asking pertinent questions

7 = The student:

- a. communicates insufficiently in some discussion contexts
- b. frequently uses English, with and without instructor permission
- c. gives short answers, has difficulty elaborating when requested

1-6 = The student:

- a. is unable to communicate in most or all discussion contexts, is tardy or leaves early
- b. speaks mostly English in class
- c. makes mostly errors with regard to materials covered
- d. responds to contextual questions with isolated words or silence

0 = The student is absent, regardless of cause.