How Blending a Cyber ESL Program with In-Person Approaches Succeeded in Helping Unserved Native Spanish Speakers Improve their English.

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Abstract[i]

This article describes process and outcome evaluations of a blended Cyber ESL program for native Spanish speakers in Chicago who could not use regular ESL classes. The outcomes measured against before and after scores and several comparison groups showed large gains in English language proficiency. 58% percent of students from the cohorts which took the appropriately normed English tests advanced at least one grade level and 31% advanced two grade levels in a sixteen-week course. Focus groups with students revealed large satisfaction with the course. The students had a wide-age range of characteristics but the majority were women and from lower-income households. The results showed an advantage for combined online and in-person tutorial approach over just class-room or just online approaches especially for certain students. Forty-one million U.S. residents are native Spanish speakers. An innovative approach to improving their English is a major contribution to their integration into the economic mainstream.

Introduction:

This report describes an experiment to test whether a blended cyber ESL and intense tutorial program could produce better results than either a cyber ESL program without tutorial supports or regular classroom ESL programs for native Spanish speakers in Chicago who for a variety of reasons did not wish to attend regular ESL classroom programs.

In September 2014, Chicago's Instituto del Progreso Latino began a new program, Cyber ESL. This program combined online access to an English as a Second Language cyber-program and substantial in-person support to students. The online access was provided via a loaned laptop computer and internet access for students´ use in their own homes. This report summarizes the results of the program and that of comparison programs.

Instituto conceived of the Cyber ESL program as a way of meeting the needs of a particular segment of their community: local residents whose first language was Spanish, whose families communicated in Spanish at home, and who were, for a variety of reasons, unable to attend regular classroom ESL sessions. These reasons for not taking regular classes align with prior findings documented in the literature on barriers to participation in adult learning (Cross, 1981; Scanlan, 1986; Menard-Warwick, 2005) and included family responsibilities, work responsibilities, constantly changing work shifts, a sense of failure at regular educational institutions, and lack of family support for classroom programs that met multiple times per week. Instituto, and the program funder, were keenly aware of the importance for Spanish speaking immigrants of improving their facility in English for family, community, and work reasons.

Methodology:

Instituto staff decided at the outset that they would not permit a randomized experiment of their students to test the program. Instead, staff and researchers decided on a quasi-experimental design which involved comparisons of program results with data from a variety of ESL programs which did not include a core computer component. The research included observations of program sessions, frequent interviews with program participants, program staff and management, and before and after program test results. The null hypothesis was that students in the combined computer and tutorial program would not outperform students in regular ESL classroom programs that did not contain a substantial computer assisted learning component.

While minor aspects of the program changed during its course, the key elements remained the same. Instituto recruited students for five program cohorts with, on average, fifty students per cohort. These students were divided into two groups of roughly 25 students for teacher and weekend classroom assignments. The number of students per cohort was determined by staff and laptop computer capacity. Cohort sessions lasted for 18 weeks during which time students used an Institute provided lap-top and internet connection to work from home and engaged in program activity described below, the major component of which was bi-weekly intensive seminars with ESL exercises. After the first two cohorts, applicants were admitted on the basis of their English capacity being at an intermediate level according to the TABE (Test of Adult Basic Education) Locator Test[2]. The lesson of the first two cohorts was

[2] The TABE (Test of Adult Basic Education) Locator test assigned applicants to a TABE native English speaker´s level. After the first several cohorts, Instituto admitted only intermediate level students to the program as beginning students struggled and advanced students did not benefit greatly.

that students below this level had difficulties with the program and students above that level were hitting a ceiling effect on their scores. For this reason, the analysis of gain scores was limited to students in cohorts 3 through 5 although focus group material was used from all 5 cohorts. Since this project was partly a process evaluation, it was expected at the outset that some program characteristics such as the entry criteria would change, especially at the beginning.

While there were other minor changes to the program, the only other major change was that in cohort 4, staff added an exit interview as a requirement for course completion in which the post-test was administered. This change was instituted to increase the number of students taking the post-test. As a result, the percent of students taking the post-test increased from 72% to an average of 96% in cohorts 4 and 5.

The program:

It's funny that this is a virtual program but yet there is a lot of human interaction and personal attention to help you. I feel that is a very strong style of this program.

(Cyber ESL student, student focus group)

The students received the following program elements:

1. Several Friday evening or Saturday morning orientation sessions on alternate weeks concentrating on orientation issues and computer technical assistance.
2. After the orientation sessions, bi-weekly Friday or Saturday half-day sessions that concentrated on assigned homework and a variety of other ESL-related activities including conversation and group presentations in English on a chosen topic.

3. Students' at-home, on-line study using the USA Learns software. From cohort 3 on teachers emphasized that the program required 12 hours work per week. Teachers did this to encourage students to spend more time online.
4. One teacher call per week which, while it varied in length, was scheduled for 30 minutes
5. One student advisor telephone call per month and additional advising sessions by appointment.
6. One Skype session per week with two or three students and an instructor in each session which promoted English speaking through role-playing various situations.

USA Learns

Instituto program staff chose USA Learns as the online ESL source after examining a number of such online sources and before the research started. The staff were impressed by the software's problem-based approach with each lesson containing a short dramatization of real-life situations followed by questions on the episodes. The episodes featured situations immigrants are likely to encounter in their life in the USA such as negotiating with a landlord or with a work supervisor and interacting with a doctor and a bank teller. The program was run out of the San Diego County Department of Education the Department which is a technical resource for individual school boards in the county.[3]

Key prior research findings about ESL and Cyber ESL programs:

The field of English as a Second Language studies is comparatively well-researched.

[3] Research staff visited USA Learns staff in San Diego and are grateful to those staff for the help they gave in explaining the program and for providing detailed data on the use of the program.

At the beginning of the millennium there was a a paucity of impact studies on what is collectively known as computer assisted language learning, (Doughty and Young, 2003 and Zhou, 2003). The same went for a parallel field of research known as task-based language teaching. This latter relies on the principle that language instruction based on tasks the students encounter in their everyday life is likely superior to instruction based simply on un-contextualized grammar and vocabulary acquisition. More recently, however, there have been important additions to the research. The research area still experiences difficulties including the following:

1. The lack of methodological rigor in existing studies;
2. The broad range of activities encompassed by the term computer-enhanced learning so different studies have a different mix of activities;
3. Most studies are conducted by the program providers with outcome measures likely chosen to maximize positive results.
4. The impact of any technologically enhanced language instruction is heavily mediated by the learner, the instructional setting, and the assessment tools. Hence, the evaluation of such programs is difficult.

The research, which, generally, supports the effectiveness of computer enhanced learning, is useful for specifying the rationale for such an approach to ESL. Computer ESL programs are most suited to intermediate and advanced students because of the limited skills of beginners to access materials in the target language (Lambert, 1991). Moreover, most studies regard learner-instructor interaction as essential for maintaining motivation and interest as well as problem solving (Moore and Kearsley, 1996). This point argues for blending of online and in-person instruction, something

Instituto implemented from the outset with their Cyber ESL program.

Much of the existing literature highlights the advantages of computer-enhanced learning (See Hancock, Elien N. et al., (2003) for a summary, Maja Grgurovic et al., 2013 and Marzieh Sharifi et al., 2015). Access and exposure to engaging, authentic and comprehensible yet demanding material in the target language is essential for successful language learning and these characteristics can be captured most easily in an online lesson than a textbook-based lesson (Zhou, 2003) and multimedia (visual, audio and text) presentations can create stronger memory links than a single medium alone, especially when video materials can bring natural and context-rich linguistic and cultural materials to the learner. The internet enables the learner to access authentic news and literature in the target language, which can reflect current cultural changes more effectively than printed sources (Weyers, 1999). In addition to being adaptable to culturally-relevant contexts, a video clip in combination with a text definition in teaching unknown vocabulary is more effective than a still picture in combination with a text (Al-Seghayer, 2001). In essence, computerized approaches to language acquisition allow learners to be constructors of their own knowledge through active participation in the learning process (Passerini and Granger, 2000). When meaning is negotiated (through computer

interaction) input comprehensibility is usually increased and learners tend to focus on salient language features (Blake, 2000).

The features of computerized learning programs also create efficiencies that have advantages. Digital technology allows instant and accurate playbacks which helps the learner to access specific segments much more easily without spending time to locate them (Shea, 2000). Moreover, automatic speech recognition technology easily allows feedback. Pronunciation is a fundamental element of language learning, but providing feedback in a classroom setting is cumbersome (Mostow and Aist, 1999). With the advancement of speech synthesis and recognition technologies, the learner can carry on near natural conversations with a computer program around preselected and programmed topics (Bernstein, Najami, and Ehsani, 1999). Finally, tracking and analyzing students' errors and behaviors is an important element of language instruction and computer programs can store student responses which can then be analyzed by a human instructor or the computer (Sinyor, 1977; Nataga, 1993). Not surprisingly, student motivation is an important element of success (Abdur Rehman et al., 2014).

We should note one general finding from the world of ESL instruction. Not surprisingly, the more hours a student spends learning English, the more that student learns. However, at some point, extra hours produce diminishing returns. In a study of over

6,500 students, 53% of those receiving below 60 hours of classroom instruction gained at least one grade level while the corresponding percentage for those receiving 140 or more hours of instruction was 70% (Young, 2007). The same study showed that the percent of students in the low-beginning and high beginning ESL range (the range had six intervals from beginning to advanced) who advanced at least one grade level was in the high 70s. The proportion among beginning (the lowest ranking) and advanced (the highest ranking) ESL gaining at least one grade level were in the low 50 percent regardless of the number of class room hours. The advanced group probably hit a ceiling effect, i.e. a level unlikely to be affected by any similar program or a level above which it was impossible to score.

Study methodology

Instituto del Progreso Latino wanted both a process and an outcome evaluation. The research team engaged in a number of different activities to produce these evaluations. Beginning with the process evaluation, the research team engaged Instituto staff in initial discussions about the program structure and staff roles. Researchers also engaged in a review of the academic literature on ESL programs and on computer-assisted ESL programs for adults. These processes allowed the research team to design data collection protocols with Instituto staff for quantitative data on program

activities and student academic progress. The research team also used these initial conversations to develop protocols for student focus groups and formal interviews of staff.

Research team members conducted focus groups of about ten students in each of the cohorts, with two additional focus groups for the first three cohorts to facilitate the initial process evaluation. Students were compensated with a $25 gift certificate for participation in a focus group. Focus group and interview protocols were adapted over time as our understanding of the program increased and fresh questions emerged. In addition, student focus groups were conducted at least partially in Spanish from cohort 3 on. Individual instructional and support staff interviews took place at the outset of the program and then one in the middle and at the end of each cohort. In addition, research staff observed a number of the weekend class sessions in order to describe the in-person group interactions taking place.

Student focus groups and staff interviews were audio recorded and transcribed by a bi-lingual member of the research team. This team member translated Spanish portions of the focus groups into English, noting in the transcript the sections that were conducted in Spanish. Analysis of the qualitative data focused on identifying and exploring key themes related to experiences with the program including: scheduling, in-person experiences, and technology.

Instituto's computerized application for the Cyber ESL program was seen as a way of weeding out applicants whose facility with technology was too rudimentary to make use of the program. The research team used de-identified application data to generate descriptive findings on the characteristics of Cyber ESL students. In addition, the research team used aggregate data from Google analytics to describe USA Learns usage patterns as a point of comparison for Instituto's Cyber ESL student usage.

The research team worked with Instituto to develop a comparison group for the outcomes study. Instituto did not wish to construct randomly assigned program and comparison groups. During the initial stages of the project it was decided to recruit a comparison group of students who would receive laptops, internet connections, and a minimum amount of technical assistance to learn how to connect to USA Learns. This group, therefore, received the online portion of the program but not the various educational and support systems built into the regular program. No focus groups were conducted with the comparison group in order to maintain their only program input as access to USA Learns.

Instituto staff collected pre- and post-test ESL proficiency data for all Cyber ESL cohorts, including the comparison cohort. For the first three cohorts the test was the regular TABE test and then for cohorts 4-6, TABE CLAS-E tests. This additional test was used

after discussions between the research team about the importance of using a test normed for native Spanish speakers. The research team used these data in descriptive statistical analyses and our regression model. We also compared test score changes for Cohorts 4 and 5 to the "computer only" comparison group. We provide additional comparison groups by including data from Google Analytics on USA Learns users and ESL outcome data from the Illinois Community College Board (ICCB) and a Chicago-area community college.

Previously, we outlined the specific ways in which Instituto's Cyber ESL program changed over time. The research team had to develop methodologically sound ways of addressing this in the research design. One way of dealing with programmatic changes is to treat the first iterations of a program as a shake-down cruise and only employ later iterations for the purpose of quantitative outcome evaluations. The Cyber ESL program was designed and funded with this consideration in mind. In fact, such a strategy was forced on the final analyses by the change described in 4 above. After an initial period of research and conversations between the staff and the team, it was decided that pre- and post-test should be the so-called ESL CLAS-E test not the regular TABE test. The reason is based on the fact that the CLAS-E is normed for non-English speakers and regular TABE is normed for native English speakers. Instituto used

regular TABE in classroom programs and initially in the Cyber ESL program because that is what the State of Illinois, the major funder of ESL programs in the state required. The research team decided that, in light of this crucial change, it would include in the final quantitative analyses of changes in English language skills only scores on CLAS-E tests. While this decision reduced the final number of students included in these analyses, the choice was inevitable and the team was still able to use the qualitative data from every cohort. In addition, the regular TABE results for the initial cohorts provided useful information for program changes including the decision to limit student entry to students scoring at the intermediate level. We would argue that none of the other changes or variations invalidate the integrity of the program for the purposes of the outcome evaluation.

Part of the process evaluation process was the writing of three interim reports and discussions of these reports among the research team, the program and organizational staff, and the funder.

Who were the Instituto program students?

The program aimed to recruit fifty students per cohort with two teachers to support those students. A goal of the program was to recruit students mainly from the two zip codes around Instituto but not to turn away applicants who came from further away. Students were recruited in a variety of ways. Some students were attracted

by flyers and notices distributed at Instituto and so these students had a previous connection to the organization. As Instituto stepped up its recruitment efforts, staff distributed flyers in libraries, churches, and other local establishments. An August 2015, Telemundo TV news channel segment on the program resulted in more potential student interest.

As one cohort became full, remaining applicants were put on a waiting list, and then re-contacted when recruitment started for the next cohort. This waiting list process worked well except for the comparison group students. Some people still on the waiting list at the time of recruitment of that group had to be re-tested before entry because of rules about the time limits of the validity of English language tests. Some were naturally reluctant to undergo another round of testing. Moreover, some comparison group recruits were aware of the full program and disconcerted by the limited components available to the comparison group. In the end, staff had to make many more telephone calls to potential comparison group recruits to secure their interest. This resulted in the comparison group being split into two segments between October 2016 and January 2017 due to the slowness of the recruitment effort.

General demographics of the student body

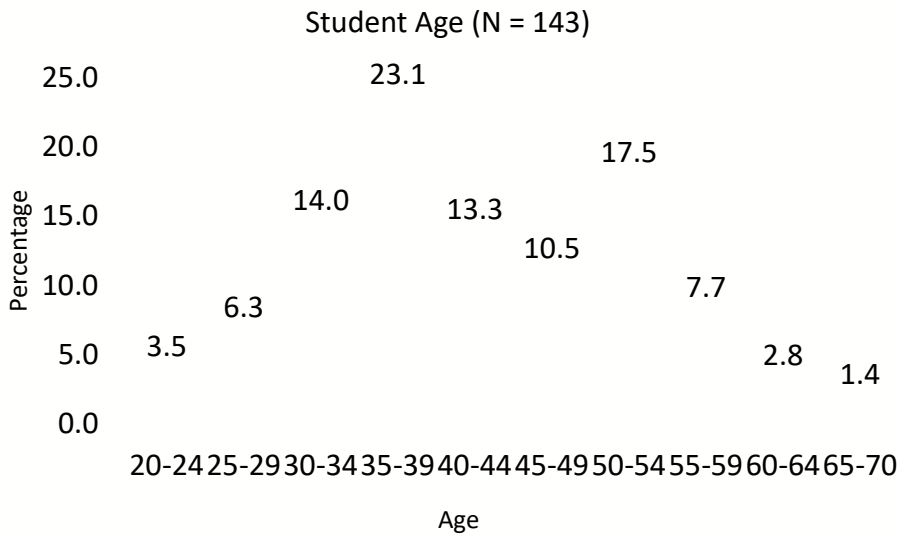
The following figures are demographics on students in cohorts 3 through 5, a total of 143 students. A further 100 students attended cohorts 1 and 2. While we do not use these students' demographic or test data, we do use the information they gave us in student focus groups.

- The student body was largely lower-income. Fifty-nine percent reported household incomes of less than $20,000 per year.
- Seventy-six percent were women.
- There was a broad age distribution among the students. Ten percent were between the ages of 20 and 29, and 35 percent between 30 and 39. A further 42 percent were between 40 and 54 years of age. This distribution shows the program has been able to attract all working age groups. Almost 30 percent were fifty or older. (see Figure 1)
- Twenty-three percent had children of an age to require substantial care, namely 0-5 years old.
- Twenty-nine percent had children between the ages of 6 and 11.
- Twenty-two percent of the students were single mothers.

Some of these circumstances make attendance for a regular classroom course difficult, an attitude reinforced by many of the students' unhappy experiences with formal education.

While the majority of students came from zip codes close to Instituto, some came from further afield. Almost 60% of students came from the four closest zip codes and the rest from a variety of other zip codes including a few from suburban areas.

Figure 1: Student Age



Self-report data on students´ citizenship and legal residence status, as well as the length of time they report living in the U.S. at the time

of registration in the program, suggest that there may be qualitatively different 'types' of Cyber ESL students. These differences may have implications for the types of support they need to complete the program successfully.

Table 1 shows a cluster of older students (aged 45 and older) who lacked U.S. citizenship or legal permanent resident status (LPR).

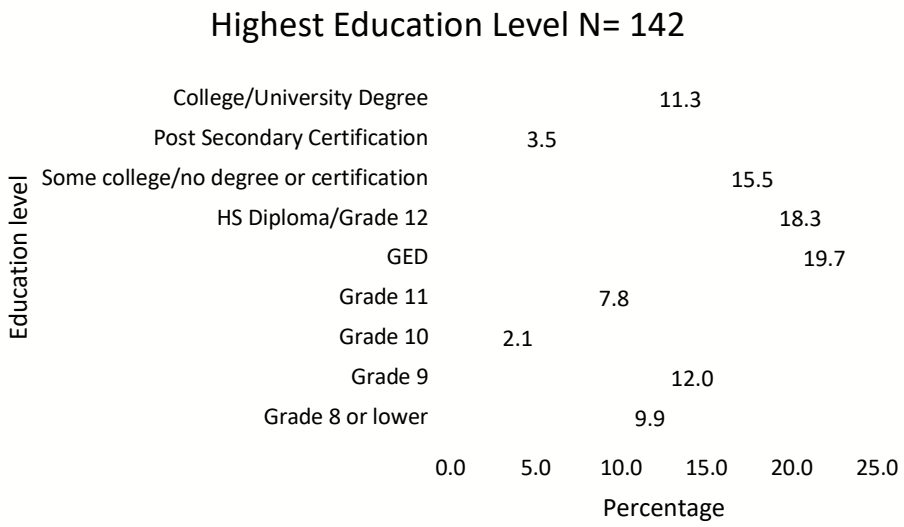
Table 1: Age by Immigration Status

	Citizen or LPR Status		
Age	*Yes*	*No*	*Total*
20-24	1	2	3
25-29	3	4	7
30-34	11	7	18
35-39	18	12	30
40-44	10	8	18
45-49	2	11	13
50-54	5	18	23
55-59	3	7	10
60-64	0	4	4
65-70	0	2	2
Total	53	75	128

Figure 2 shows a broad distribution of the highest educational level students reported having achieved. Almost one-fifth of the sample had finished their formal education by 9th grade. Forty percent had either high school graduation or a GED. Eleven percent had either a college or university degree. This enormous spread in educational

experience raises the issue of how students with very different backgrounds manage in a single program. We do not know, however, in which country the various stages of education occurred although we do know from focus groups and from the question about students' English language educational experience that much of this education occurred in their country of origin.

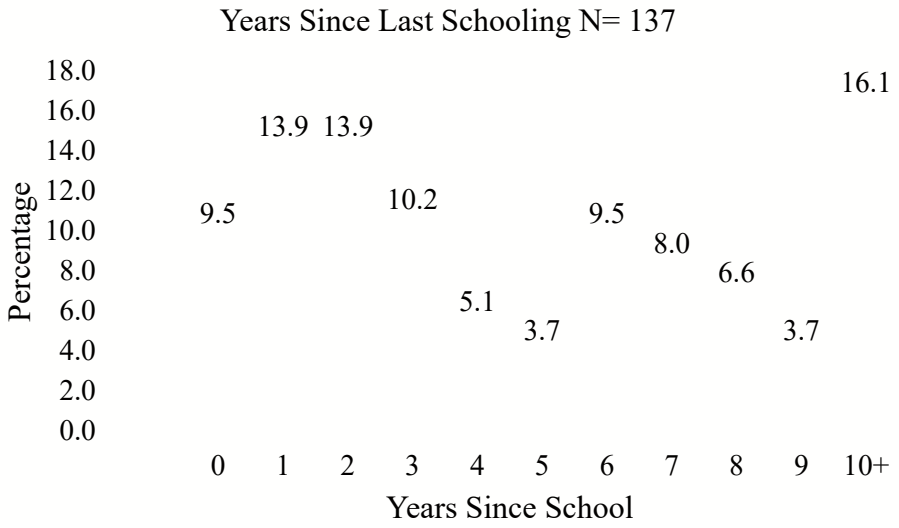
Figure 2: Education Level



Another key education variable, described in figure 3 below, is the number of years since students last attended school. Our 3 cohort sample has a group of students with 1-5 years since they last attended school, another group from 6 to 9 years and then another group at the 11-year level. But almost half of students, 48 percent, last attended school at least five years before the start of their Cyber ESL cohort. These students might well have difficulty attending

regular ESL courses which lacked the individual support of this Cyber ESL.

Figure 3: Years Since last schooling



Another relevant educational variable was the nature of students' prior English language educational experience.

Table 2: Prior English language educational experience*

Name or type of organization providing the experience	Number	%
Instituto del Progresso Latino	32	18.6
Community college	81	47.1

Elementary or secondary school	13	7.6
Other community organization	24	14
Multiple organizations	22	12.8
Total	172	100.1

* Note the higher N indicates that some students chose more than one option.

Total percent is higher than 100 due to rounding.

Table 2 shows a group of students who came to the program through prior contact with Instituto. It also shows that almost half (47 percent) had some community college experience, an experience clearly not sufficient to push them beyond intermediate English. In focus groups, students commented on how much more welcoming and supportive the Instituto program was than the community college they had attended. Staff pointed out that many of their students had seen themselves as failure in their previous educational institutions.

Almost all students reported working while they embarked on their Cyber ESL program. The 120 students in these cohorts who worked had various work schedules. Slightly more than half the students (57 percent) worked a traditional work week. But among students with a non-traditional schedule, there were issues such as split-shifts and changing shifts work patterns that would make regular classroom ESL courses difficult to sustain.

Table 3: Hours worked per week by working students

Hours worked per week	Number	Percent
Approximately 15 hours per week	5	4.2
Approximately 20 hours per week	18	15
Approximately 30 hours per week	25	20.9
Approximately 40 hours per week	63	52.5
Over 40 hours per week	1	0.8
Hours vary	8	6.7
Total	120	100.1

Table 4: Type of work schedule of working students

Type of work schedule	Number	Percent
Traditional work week	65	56.5
Nontraditional (e.g. weekend, night shifts, split shifts)	50	43.5
Total	115	100

Outcomes

Student experiences with cyber ESL

The students' views of the program are largely taken from focus groups conducted by two or three of the research staff in the program offices. The participants for the groups were selected by Instituto staff with attention paid to age and gender distributions. Instituto staff did not attend the focus groups. In general, the students were eager to talk and while the conversations were structured around pre-prepared topics, students were free to raise whatever topics they chose. Where noted, some responses are also from Instituto staff taken in individual staff interviews.

A critique of a program necessarily involves detailed comments about short-comings. We should balance these comments with the generally strong positive views about the program that students expressed. The following is a brief summary of some student and staff responses

Cyber ESL was an important program for mothers with young/elementary age children. During student focus groups, mothers expressed how Cyber ESL was convenient for them:

I heard about this new program "Cyber ESL". I took it because I do not have another time to attend another class because I start working in the evening as a part time and in the mornings, I have another job—another part time. And I do not have the time to attend

another class, so this program was perfect for me because I could study from home and come to classes once in a while, every other week. I took it because I need to improve my English, my grammar, and just the language.

I believe that for mothers it is very difficult for them to go to a regular school with regular hours because the kids get sick, the school calls you, there are school meetings. If you want to be part of your child's education, then going to school at regular school hours is difficult. It has been difficult. Despite that I have been trying to learn English as much as I can at home and this program has made it easier to learn at my own time. While I am waiting for my son, I can be learning English.

A key program strength of Cyber ESL was that the students were able to customize their online time, which is critical for students who hold a full-time job or multiple part-time jobs and cannot afford to stop working. This is in contrast, for example, with some courses at community colleges. The flexibility allowed students to cope with changing job and domestic demands. One student said:

In [community college] *I took three courses. They were not working for me because if you missed three classes then they would drop you from the class. Even if it is an emergency they do not care.*

And another student commented*:*

I think that's why we ended up here because there are other programs at institutions, but you have to attend every so often and our jobs don't really allow us.

A major program strength of the Instituto's Cyber ESL program was that students received individualized attention from the teachers. Students perceived this attention to be very important. Many participants in the student focus groups mentioned that in previous non-Instituto ESL programs they had felt embarrassed speaking up in class or practicing their English in front of the class:

I think this is good, because my English is bad. I was studying English but I don't practice because I am afraid to speak English. I say 'I don't want the teacher to call me [brief laughs].

The individual attention and encouragement are key to drawing a student out:

As to here, the attention is more direct with us, that at times I do not know and I say "I can't" or "I don't know" and she says "you can" and she repeats the question slower, then I try to understand and respond. Then she tells me "ok", corrects me, and I become more comfortable.

It's funny that this is a virtual program but yet there is a lot of human interaction and personal attention to help you. I feel that is a very strong style of this program.

The individual meetings students had with their teachers on telephone calls and Skype calls allowed them to practice their speaking/pronunciation and to build up confidence:

Question: *Has that been a similar experience [*the opportunity for individual practice*] to most of you? Or how have you felt about the [*teacher*] meetings?*

Yeah, especially the teacher is working with everyone on their own level, because we are all on different levels. We all have the same homework but she gives us extra homework because she knows we need extra help.

There's something else that I really liked about the last Friday class. They called us one by one to go with a teacher. And they were asking us questions. That seems great to me. I didn't understand much of what he said but I just asked him to repeat it again and it helped. I answered somehow but it seemed like a great exercise it was very personable and it was direct, [inaudible] it's something like Skype but in person. And I'm like if I could do it more often it would be perfect.

This one-on-one attention students receive from staff can also help students feel more confident to converse and practice with their classmates, something that may not be achieved in a traditional classroom:

*I really like the [phone] call. [instructor] makes you talk in English. She asks you questions and the whole conversation is in English. You have to focus and if you don't understand then you ask her to repeat it. Then after responding she critiques your response and suggests a better way to respond. She corrects us while she listens to us. I speak it [*English*] when I need to but if I don't need to then I don't speak it. It [*the phone calls*] truly helps a lot.*

A key element of the program was the provision of both a computer and free internet access for the duration of the program. The computers were on loan and internet access provided for the duration of the Cyber ESL course. This was important because some of the students who had computers at home did not have access to the internet on a reliable basis and some did not have access to computers in the home. It turned out that the program's first challenge was teaching students basic computer use. Despite the fact that students were asked at intake whether they could use a computer, many students faced challenges with using a mouse, getting on line, and remembering and using their USA Learns password.

The program staff also had some learning to do about computers. Initially, the program used donated computers but those computers caused significant technical problems. Program staff learned that despite the time pressure, it was better to re-set the computers

before each cohort began so they were ready at the start of the program. Instituto also realized it needed higher grade computers to deal with the fact that some of the programs on the computer had automatic upload of program revisions which quickly used up available memory. In the last several cohorts, Instituto assigned one of its IT personnel to assist Cyber ESL students with technical issues.

Nevertheless, students managed to get online and stay online with USA Learns despite the occasional hiccup. Many students significantly upgraded their computer skills during the course of the Cyber ESL program.

An online program provides the critical advantage of the opportunity for countless repetition of any part of a lesson, at any time, without the embarrassment of questioning a teacher, or of having anyone else observes your struggles. A teacher in a classroom may try to correct an individual student's grammar or pronunciation a few times. A computer program can do the same any number of times. A teacher commented:

Even with my father, there are certain words that just like you can't shake them. So, I think that's been a big help. Because where they can use a computer on USA Learns, they can hear, they can understand why it is used.

Question: *So, you do a part of the lesson and then you can just go back and do it again?*

Yes. So, you can repeat all of the lessons over and over again. It does tell us as teachers how many times they did it. Or the attempts that they made. There are certain ones where there are words that you say them. Or there are words that you spell them out which I think is a big deal because spelling can be very daunting. And once someone says, "oh okay, I can spell this. I've gotten it right 5 out of 10 times, the words that I spell." I think that is very helpful.

Question: *Because it's repetition?*

Yeah. It's a lot of repetition whereas in a classroom you can spend an entire repetition on past tense and get nowhere. So, you need something to build that base, so that you can keep going with it.

At the same time, students highlighted the importance of the in-person group sessions. One key advantage students noted for the Cyber ESL program was that they did not feel unwelcome nor did they feel uncomfortable competition in the classroom setting. Indeed, some of the weekend sessions were structured to force student collaboration rather than individual competition. Most students reported that the face-to-face sessions encouraged active participation. Some working students proudly reported that they felt more comfortable using English in the workplace as the course

progressed and that their colleagues and supervisors noticed and commented on the improvement in their English. Others reported much more comfort than before in such English language situations as doing bank transactions in person and in negotiating medical appointments. As one staff member put it, students went from `hardly speaking English` to giving ten-minute speeches in English in front of the class.

Staff, during a number of interviews, was discerning about the kinds of challenges their students face. While the program was designed for students who had family and/or work responsibilities, finding time for the various program activities was still a challenge.

I think here in Instituto, what makes it hard is really time. They're not just juggling a one-person lifestyle with a job. They are juggling kids, grandkids, spouse, job, and it's just a lot. Our lives are very busy and we have to make the time to do these things. So, I think for them who work odd hours, it's very difficult to say, "Okay, at this time I'm not busy. Because when I come home from work, I'm cooking dinner and I'm feeding my kids, and I'm putting them to bed, and then I have maybe an hour for myself".

Staff recognized that students had a difficult time creating a new schedule to incorporate their new cyber ESL tasks:

Some of them said, 'I just thought it was going to be easier and focus.' And I go, 'Yes.' Some of them think that because it's a computer and they're going to have the teacher on back of me they think, 'Oh this is going to be a piece of cake.' But you have to put in a lot time; you need to do your own schedule, really. Then they say, 'You are right. I am having a hard time to establish my own schedule'.

Family issues did not go away as one mother pointed out.

Well, I have two young adults in the house and that makes things difficult. I worry as a mother especially with one daughter. What is going to happen to her and how I can help her, because of that I forget to do the homework and thinking about her takes away my focus to pay attention on the lessons. So, through the resources [found through Instituto advisor], I have been able to find resources to help me deal with helping her.

Staff were also cognizant of the particular status of their students as "students". One staff member remarked that the role of a student can be overwhelming, especially if the student has not been a student for some time or if students had never received any formal education. Staff and students also recognized the status incongruity that can accompany moving to a new country.

I'm somebody in my country but when I got here, I'm nobody. So, I need to be able to go back to school, to be able to teach or to work in my field. Like these two ladies, they are social workers and here they are getting paid 10 cents for each newspaper that they deliver.

She's a registered nurse down in Mexico, and she said, 'I'm a registered nurse. And I'm nobody here. I'm just another number.

A staff member summarized the range of challenges as follows:

One of the things we have in our packages is how to do the goals settings and steps to making them have a better experience in Cyber and more complete in what they get to learn. It's been hard because (1) they don't know how to set goals or how to follow them (2) it's always something. It's their work getting in the way. It's the family getting in the way. So, it's been kind of hard, because… for example sometimes they want to go to college but they don't have all the information and they have obstacles: money, legal status; and those goals that they set are hard to obtain. Job setting goals: Getting a better job. Yes, they do get the English which helps them understand and have better job but other components come in fill the goal again. Such as time, opportunity and legal status barriers."

Part of the initial design of the program was to provide resources for students running into other problems that impinged on their work in the program. For this reason, the program originally included two

student advisors later reduced to one because of state budget cuts.[4] Interviews with those advisors showed that a few students had very serious domestic problems some of which were beyond the scope of the advisors´ capacities. In consequence, Instituto developed and signed contracts with a number of social service organizations to provide help to those students. Until cohort 5 there were about two to four such referrals per cohort. In cohort 5, a larger number of students, all of them male, were referred to such services. These personal problems included domestic abuse, extreme financial difficulties, loss of a loved one, and very serious health problems of a family member or of the students themselves.

While only a small number of students needed special referrals for these problems, a larger number of women students reported difficulties stemming from the active discouragement of husbands and partners and in some cases from children mocking their efforts.

The students' overall satisfaction with the program, however, was demonstrated in the large number of students who said in focus groups that they wished the program were longer or that there was a similar program for them to graduate into. In fact, Instituto´s vocational ESL program provides that opportunity for some students.

[4] There has been some debate about the title of these staff. By state law, they cannot be called counselors unless they have the appropriate qualifications. From our observations, they were also not academic counselors so we use the term student advisor.

Outcomes on pre- and post-test scores

For clarity's sake, we report here the results for cohorts 4 and 5 on the TABE CLAS-E test, the national test normed for non-native English speakers. Table 5, below, shows the proportions of students' grade level change from pre- and post-test TABE CLAS-E grade level equivalents. Officially, CLAS-E scale scores do not have a direct Grade Equivalent. Grade Equivalents are intended to correspond to average chronological age, mental age, test score, or other characteristics of an elementary or secondary student. Therefore, a Grade Equivalent may not have the same meaning when transferred to the learning of adults. (Miami- Dade County TABE Policies and Guidelines, 2011). For comparison purposes, however, TABE Grade Equivalent to Scale Score conversation tables were used here.

Table 5: TABE CLAS-E results for students in Cohorts 4 and 5

Grade change	Took Test(s) and passed at indicated level: %	Took test(s) and passed at indicated level: N
Stayed the same	41	28
Advanced one grade level	27	19
Advanced two grade levels	31	22
Scored one grade level lower	0	0
Scored two grade levels lower	1	1
Total	100	71

Note: Stayed the same includes people who scored less than 1 grade higher or less than 1 grade lower on the TABE or CLAS-E. Three students enrolled in either cohort 4 or cohort 5 and did not take the tests.

The one student dropping two or more grade levels can be considered a statistical outlier and, therefore, disregarded. 58% percent of students advanced at least one grade level and 31% advanced two grade levels. On the face of it, this is a startlingly good result. We should add at this point that the use of grade advances, though common, has a problem. It is a quite a crude though dramatic measure and could hide useful advances in students who did not actually achieve a grade level improvement.

Predicting outcomes:

In order to better understand the factors that are associated with improved outcomes in Cyber ESL, we conducted regression analysis for cohorts 4, 5, and 6 combined (see Table 6 below). We controlled for sociodemographic characteristics, education history, family and work circumstances, and ESL goals with score changes in reading and listening/speaking as separate outcome variables. All control variables come from student application data and outcome variables come from TABE CLAS-E pre- and post-tests. Our sample includes only those students for whom we had all control and outcomes variables. The 25 students excluded from this model were more likely to have smaller gains in the reading and writing test, the listening and speaking test, be in the non-treatment group, married, be single, and be citizens. Hence the model by virtue of these exclusions if anything underestimates the differences between the program and nonprogram groups.

Table 6: Regression Predicting Gain Scores for Cohorts 4, 5 and 6

	Reading Gain Score		Listening and speaking Gain Score
Instituto full program	0.34*	(-3.06)	0.25
GED/HS Diploma or Higher	0.047	(-0.45)	0.031
Years Since Last Schooling	-0.143	(-1.29)	0.174
Citizen or Legal Permanent Resident	-0.081	(-0.81)	0.126
Married or Domestic Partner	-0.069	(-0.54)	-0.229
Has Children Ages 0-5	-0.21	(-1.63)	0.15
Has Children Ages 6-11	.32**	(-2.93)	-0.11
Has Children Ages 12-18	-0.01	(-0.15)	-0.09
Has Children Ages 18+	-0.03	(-0.27)	-0.05
Single Parent	-0.076	(-0.60)	-0.119
Part Time Varies-30hrs	-0.048	(-0.25)	0.004
ESL Goal			
Rf. Improve English	0	(.)	0
Take College Classes	0.041	(-0.43)	0.021
Improve Current Job	0.006	(-0.07)	0.007
Buy a House	0.004	(-0.04)	0.15
Obtain a Job	0.16	(-1.66)	0.042
Become a US Citizen	-0.162	(-1.68)	0.076
Age	0.11	(-0.85)	-0.26*
Female	0.143	(-1.35)	-0.039
Income	-0.09	(-0.85)	0.111
Outside of Zip	-0.094	(-1.06)	-0.157
Internet	0.147	(-1.51)	-0.054
CLASE Reading & Writing Pre-Scale Scor	-0.33	(-3.40)	-0.46***
Observations	97		97
Adjusted R-squared	0.362		0.475

Note. Regression Controls for Gender, Income, Zip Code, Previous Education, Legal Status, Marital Status and previous Internet Access, Work Schedule, Motivation for ESL enrollment. See Appendix for full model results.

Standardized beta coefficients; t statistics in parentheses *p<0.05 **p<0.01 *** p<0.001

Our regression analysis shows that the effects of taking the full Cyber ESL program. The direction of the effect for taking the program is associated with higher gain scores which were statistically significant. Being enrolled in the program group was associated with significant increases in gain scores for tests in both reading/writing and listening/speaking. Enrollment in the full program group was associated with an increase of 34.35 points for reading/writing and 21.6 points for listening/speaking. This highlights the importance of the additional in-person supports and activities to achieving gains in reading. It also suggests that the audio and video components of the online USA Learns supports achievement in listening and speaking with or without additional in-person supports but not by as much as with those supports. The direction of the effect of pre-score level is negative meaning that the lower the initial score, the higher the gain in listening/speaking.

We did not find any predictive power for education history or ESL goals on either outcome variable. This suggests that different prior educational experiences and reasons for enrolling in Cyber ESL are not driving the gains we see in test scores. Nor do we see any influence of citizenship or work status. This suggests that the ability to work on one's own time on the online portions of the program are a benefit to all. The only sociodemographic variable associated with score gains is age – the older the student, the less likely they are to

achieve gains in listening/speaking scores (but not reading scores). The only life characteristic associated with increased scores is having at least one child between the ages of 6 and 11. Having a child ages 6-11 was linked with an increase of 30.70 points in gain scores. We are not sure of the reasons for this. There may have been a measure of motivation in having a child of that age who was presumably learning English at school. Having a child this age may also provide opportunities for the parent to engage in their own learning: alone while the child is at school; doing homework with the child; or engaging with the child's teachers at school. We also learned from focus groups that sometimes older children were embarrassed by their parents' attempts to learn English and sometimes even mocked those efforts.

Finally, each point higher in pre-test scores in was associated with .31 decrease in reading/writing gain scores and .46 decrease in listening/speaking gain score. The higher your initial performance on the CLAS-E the smaller the gains made on the post-test score. This is an important finding in terms of targeting potential students for such a program. The result may well be due to what is known as a ceiling effect. Students scoring high on a pre-test can only score up to the highest score on the post-test thus reducing their capacity to make large gain scores.

Comparing outcomes:

Understanding the effect of a program requires some kind of comparison mechanism to establish what would have happened or not happened without the program, a situation known as the counterfactual. For some, the only secure comparison is a randomized trial where people are randomly assigned to a program group and a non-program group and the change scores of both groups compared after the program ends. Randomization is the gold standard in certain kinds of medical research. But randomization as a gold standard for all program research has eminent critics who point out, inter-alia, that after a certain time period the randomization process in social research has often become corrupted, or ineffective. This can be due to a number of issues such as differential drop-out rates from the two groups, and contagion (people in one group or other informing other people about what they think the treatment is, and those other people trying to copy it[ii]). In addition, it is arguable in a program such as Cyber ESL that substantial program gains are probably the result of the program because it is hard to think of any plausible other factors affecting the entire program group that would produce substantial gains for these diverse groups of students.

Certain comparisons we were able to make very much buttress the positive results. In the following analyses, we standardized CLAS-E

gain scores when comparing Cyber ESL students to the "computer-only" Cyber ESL comparison group. We then compared these gains to data from Google Analytics on USA Learns and the local community college context.

The formal comparison group:

As noted earlier, the students for the comparison group were recruited after five cohorts of the Cyber ESL program ended. The comparison group received a lap-top computer, an internet connection and technical assistance at the beginning to connect to USA Learns. They were also given the same expectations as regular students for how long per week they should be online. They had to agree to the two days of pre-test, two days of post-test and to returning the computers after the post-tests were concluded. They received, however, no further assistance and certainly no classroom, phone call, or Skype instruction. In essence, they were an online USA Learns only group.

While recruitment of the comparison group was similar in process to the recruitment of the regular cohorts, there were some differences. Recruitment turned out to be more difficult because some people on the waiting list would have to re-take the CLAS-E tests because they are only valid for six months. Moreover, some of the target students were aware that their cohort was not getting the

teaching supports. In consequence, staff had to make many more follow-up phone calls to fill the places and took out an advertisement in the Spanish language newspaper *Hoy*. Because of the slower recruitment, the comparison group was divided into sub-cohorts (6.1 and 6.2) with the first sub-group starting several weeks before the second one.

The next key question is the relationship between pre-and post-test score gains and student demographics. While we do find differences between the full Cyber ESL program group and the "computer only" group, none of the differences we found were predictive of outcomes (see the regression analysis findings in Table 6). A significantly higher percentage of students in the comparison group were married, but as the regression analysis shows, marital status was not a significant predictor of gain scores for learning-speaking (LS) advances or reading and writing (RW). The average length of time since the last schooling a participant had received was significantly longer for the full program group but again the regression analysis shows that years since last schooling was not a significant predictor of gain scores for LS or RW. A larger proportion of students indicated that they wanted to improve their English as a reason for enrolling an ESL program in the comparison group but this motivation was also not found to be a significant predictor of gains in LS or RW scores. More comparison group

students indicated that their motivation for the ESL program was to obtain a job, but this was also not a significant predictor of gains in LS or RW scores. There were also several demographic differences between the regular cohorts and the comparison cohort although on most such variables the two groups were quite similar. Forty-eight percent of the comparison group were married compared with 63% of cohorts 4 and 5. Sixty-one percent of the comparison group were either citizens or legal permanent residents compared with 43% of cohorts 4 and 5.

A final concern is the nature of the comparison group experience. If members of the comparison group took the pre- and post-tests, and duly returned the computers but did not use the opportunity to log onto USA Learns in a significant fashion, what the comparison shows is that the program massively out performs the comparison group in actually using the online program. If the comparison group on the other hand used USA Learns at a reasonable level of persistence, findings strongly suggest that the combination of support and tutorial services with the online program outperforms for similar populations the online program alone. In a revised version of USA Learns it became possible to track the number of times students go online. We have limited data for regular students on this variable because the data were only collected by one teacher

for a short period of time. But we have actual data use data for the comparison group from USA Learns.[5] Table 8 shows that the comparison group use of USA Learns was quite impressive. There was a large difference between the two halves of the cohort but clearly comparison group students made a serious effort online. There were also large variations. The difference in standard deviations between the two sub-cohorts shows that the 6.1 mean score was elevated by a few outliers. In comparison, teachers expected regular program students to be online for a total of 12 hours per week. What the table shows is that the comparison group is a valid comparison group in the sense that it received the online experience.

Table 8: USA Learns Bi-Weekly Number of Logins Descriptive Data for Cohort 6.1 and 6.2

Cohort Number:	Mean:	Standard Deviation:	Minimum	Maximum
Cohort 6.1	11.54	8.91	0	27
Cohort 6.2	4.85	6.08	0	23

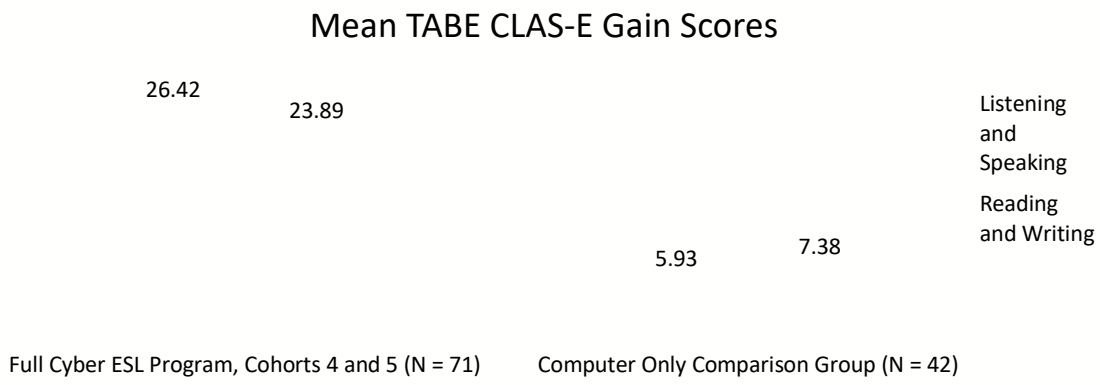
[5] The latest version of USA Learns permits instructors to monitor the number of log-ins students make to the program. Instituto staff monitored the number of log-ins made up to the monitoring point twice a week.

Listening and Speaking pre-test scores for the comparison group were significantly higher than these scores for the full Cyber ESL group. Our regression analysis shows that there were no statistically significant differences in gain scores between the two groups. But our regression analysis confirms that being in the full program group was associated with significantly larger gain scores when controlling for pre-test score, age, children, gender, income, zip code, previous education, legal status, marital status and previous internet access, work schedule, and motivation for ESL enrollment. These are legitimate controls and hence on these tests the regular group with the combined on-line and support program did in fact outperform the comparison group.

There was no statistically significant difference in reading and writing pre-test scores between the full program group and the comparison group. However, our regression analysis shows that the full program group had significantly larger gains in these scores between pre-test and post-test. When controlling for age, children, gender, income, zip code, previous education, legal status, marital status, previous internet access, work schedule, motivation for ESL enrollment, and pre-test score this difference remains statistically significant. This result is a major achievement for the program.

Table 9 shows that the gains in the TABE CLAS-E scores were, on average, much larger for the full Cyber ESL program cohorts than for the computer only comparison group. It also shows that the standard deviations for the comparison group was larger than the standard deviation for the full Cyber ESL program cohorts. The full Cyber ESL program seems to support greater improvement in English skills and, perhaps, greater similarity among the individuals within the group in terms of English skill development.

Figure 4: TABE CLAS-E Gain Scores Comparison



CLAS-E combined possible listening and speaking scores for low and high intermediate students range from 408 to 485, and for reading and writing, from 483-556. So, the program group advances were considerable in total and considerable in contrast with the comparison group.

Google Analytics data:

Google Analytics collects an overview of the patterns of use of USA Learns which, in turn, provides some comparison data for Cyber ESL. The following are extracts from the Google Analytics data on USA Learns obtained from the San Diego County Department of Education. While IP addresses are problematic in determining unique users, passwords can be used for that purpose and or URLs (uniform resource locators) and then linked to point in time IP addresses to give demographic data.

Table 7 shows the number of sessions each unique user[6] actually initiated on the program. As is clear, a large number of users stayed with the program for comparatively few sessions and a presumably different group of users continued for 9 or more sessions.

Table 7: Number of sessions on USA Learns by unique user internationally

Sessions	Pageviews
20,347,289	1,202,122,945

Count of Sessions	Sessions	Pageviews
1	6,863,722	317,515,034
2	2,210,808	125,788,964
3	1,280,211	81,943,007
4	902,984	61,916,231
5	697,354	49,720,487
6	572,200	41,431,889
7	480,014	35,384,667
8	412,734	30,726,308
9-14	1,684,350	127,075,283
15-25	1,595,675	119,531,961
26-50	1,569,202	109,330,924
51-100	1,044,597	62,406,426
101-200	580,346	27,108,223
201+	453,090	12,243,541

Table 8 shows that again a large number of users are on and off the site in seconds and many more use the site for a very short number of seconds. A large number of users, however, continue to use the site for many sessions.

[6] Note that the description "unique user" does not stop the problem of double counting users because a few users might enter with a different URL on different occasions.

Table 8: Duration of sessions per unique user in seconds on USA Learns internationally

All Sessions
100.00%

Distribution

Session Duration Page Depth

Sessions	Pageviews
20,347,289	1,202,122,945

Session Duration	Sessions	Pageviews
0-10 seconds	**5,003,348**	**5,584,864**
11-30 seconds	**683,423**	**2,299,995**
31-60 seconds	**742,815**	**3,499,865**
61-180 seconds	**1,514,206**	**11,041,536**
181-600 seconds	**2,311,689**	**38,295,603**
601-1800 seconds	**3,675,366**	**167,842,207**
1801+ seconds	**6,416,440**	**973,558,875**

We do not know who the USA Learns users were and so it is hard to make comparisons of user persistence with Instituto's Cyber ESL program. But Instituto's drop-out rate of just several users per cohort shows its capacity to retain people who signed up for the program. USA Learns in comparison has a high percent of users who are on the site just for seconds. This suggests that access to the site alone will have limited success in keeping users engaged or will only engage the most motivated of users.

Community college comparisons:

As we have noted, the translations of CLAS-E scores into grade level changes has problems. But grade level changes are accepted as an important yardstick in the ESL world. In cohorts 4 and 5 combined, 58% of students advanced one or more grade levels. The Illinois Community College Board (ICCB), the major funder of

ESL programs in Illinois, informed us that in Illinois, approximately 30% of students achieve what is known as a federal level one advance, which is one or more grade levels.[7] This comparison is made difficult by the fact that ICCB does not use TABE CLAS-E as its required test but Best Plus 2.0 and Best Literacy. These tests can only be administered if the students have completed 60 in-class hours of instruction. The comparison is also imperfect because of different tests and hence different translation protocols into grade levels. Nevertheless, the differences between the ICCB average and the Cyber ESL grade level gains are still dramatic. For another comparison, faculty at a suburban Chicago told us that the state goal was 40% achieving gains of one or more grade levels and that in the 2015 academic year, this college had achieved 43%.[8] Twenty-five percent of their ESL students were Latino. Their students were likely to come from families with higher income levels than Instituto's students. We should note that community colleges are beginning to use cyber learning in their regular ESL classrooms. At present this is to a quite limited extent partly because, in general, the state of Illinois does not reimburse colleges for providing cyber language programs.

[7] We are grateful to the Illinois Community College Board for answering all our questions with speed and deliberation.

[8] We are grateful to several staff at this institution for giving us the different perspective of classroom ESL in a community college.

Summary:

Instituto del Progreso Latino saw an urgent need to provide English language instruction for a group of residents who could not or would not attend traditional ESL classrooms. Instituto came up with an imaginative solution. As the program progressed, Instituto staff made creative changes to the program in response to inevitable teething problems and a massive state fiscal crisis that cut organizational funds. But the heart of the program remained the same. Students responded to the program with a high degree of enthusiasm. They cited the care, respect, and support of a very skillful staff, the technical assistance with coping with an online learning program, the value of the weekend classes and the phone and Skype sessions, and the enormous advantages of working with the online program, USA Learns.

The quantitative outcome results are impressive. Students in the full Cyber ESL program made great gains in their English capacity when measured against state-wide averages and persisted with the program to a degree far exceeding average users of USA Learns. The comparison group was similar enough to the program group to provide a fair test of the program group. Program group students outperformed comparison group students on reading and writing,

and listening and speaking tests to a high level of statistical significance.

The importance of the topic, helping native Spanish speaking immigrants improve their English and thus access and succeed in the mainstream institutions of this country, and the impressive results of the program suggest next steps. A policy-practice study should be made of how the use of similar programs could be promoted by the state-level funders of ESL programs. A multi-state study should examine other best practices in ESL training especially in the area of student retention (a major problem) so that all states could benefit from these discoveries. In addition, our findings highlight that individuals with elementary school-age children can benefit greatly from such a program. This suggests that programs explore recruiting from and situating ESL programs and supports in and around elementary schools and after school programs for parents of this age group. Studying the integration of ESL programs in this context will more fully indicate the potential and pitfalls of these approaches. The large number of native Spanish speakers in the US population makes such studies of vital importance.

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Bibliography:

Al-Seghay, K. (2001). The effect of multimedia annotation modes on L2 vocabulary acquisition: A comparative study. *Language Learning and Technology*, 5 (1), 269-305.

Ariza, E. N. & Hancock, Elien N. (2003), Second language acquisition theories as a framework for creating distance learning courses, *Home*, 4, (2).

Bernstein, J., Najimi, A., and Ehsani F. (1999. Subarashii: Encounters in Japanese spoken language education. *Calico Journal*, 16, (3), 361-384.

Cross, K.P. (1981). Adults as learners. San Francisco: Jossey-Bass.

Ehsani F. (1999). Subarashii: Encounters in Japanese spoken language education. *Calico Journal*, 16, (3), 361-384.

Grgurovic, M, Chapelle C. A., and Shelley M.C (2013). A meta-analysis of effectiveness studies on computer technology-supported language learning. *ReCALL,*25(2), pp 165-198.

Sharifi, Marzieh, Azizfar, Akbar et. al., (2015). The effect of Rosetta Stone computer software on vocabulary. *Procedia-Social and Behavioral Sciences,* 192:260-266.

Menard-Warwick, J. (2005). Intergenerational Trajectories and Sociopolitical Context: Latina Immigrants in Adult ESL. *TESOL Quarterly*, 39(2), 165-185.

Mostow, J., and Aist G. (1999) Giving help and praise in a reading tutor with imperfect listening-Because automated speech recognition means never being able to say you're certain. *Calico Journal*, 16, (3), 407-424.

Nagata, N., (1993). Intelligent computer feedback for second language acquisition. *The Intelligent Modern Language Journal*, 77, 330-339.

Rehman, Abdur, Hafiz A. B., et al. The Effect of Rosetta Stone Computer Software on Vocabulary Learning of Iranian Elementary EFL Learners. *International Journal of Social Science 4(1),* p. 254.

Rivera, Charlene and Eric Collum, (2004), An analysis of state assessment policies addressing the accommodation of English language learners, Issue paper prepared for the National Assessment Governing Body, George Washington University Center for Equity and Excellence in Education, Arlington, Virginia.

Sacramento (CA) Office of Education (2009). Final Report USA Learns: A Web Site Developed as part of the Supporting Programs through Technology Project. Prepared for the U.S. Department of Education, Office of Vocational and Adult Education, prepared by the Technology Study Group, Institute for Social Research, University of Michigan, and the Sacramento County Office of Education.

Scanlan, C.L. (1986). Deterrents to participation: An adult education dilemma. ERIC Cleaninghouse on Adult, Career, and Vocational Education, Information Series No. 308. Columbus, OH: The National Center for Research in Vocational Education, The

Ohio State University. (ERIC Document Reproduction Service No. ED 272 768).

Shea, P., (2000). Leveling the playing field: A study of captioned interactive video for second language learning. *Journal of Educational Computing Research*, 22, (3), 243-263.

Sinyor, R. (1997). An analysis of student behavior and error sources in an Italian CALL context. *Calico Journal*, 14, (2-4), 35-50.

Weyers, J. R. (1999). The effects of authentic video on communicative competence. *The Modern Language Journal*, 83 (3), 339-349.

Young, Sarah, (2207). Effects of instructional hours and intensity of instruction on NRS level gain in listening and speaking, *CALdigest*, Center for Applied Linguistics, Washington, D.C.

Zhao, Yong, (2003). Recent Developments in Technology and Language Learning: A Literature Review and Meta-analysis. *Calico Journal*, 21

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[ii] The senior author recently had the experience of hearing from a person who ran multiple clinical trials at a major research hospital that within several weeks of a randomized trail beginning, patients had decided which people were receiving the 'proper' treatment and were trying to imitate that