
Changing Student Misperceptions about Foreign Language Teaching: A Research-Based Approach to Improving Recruitment Practices

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Abstract

The U.S. is currently experiencing a shortage of educators, especially in the area of foreign language. Reasons for the shortage range from retirements to increased enrollments to new teacher attrition. The teacher shortage is a complicated issue, and a review of the literature reveals a dearth of research on certain potentially important factors such as student perceptions of the teaching profession. The purpose of the present study was to investigate and understand students' perceptions about a career in foreign language education and to determine whether those perceptions could be influenced by instruction and by the provision of pertinent information. Specifically, the research question posed was: Will students be more likely to consider becoming a FL teacher if they are educated about the benefits of becoming a teacher? The investigation used a quasi-experimental research design and involved secondary students (n=106) studying Spanish in five rural schools. Pre- and posttest results from the survey indicated statistically significant differences between the control and experimental groups in conceptual change for four of 12 constructs explored. This research may have implications not only for the profession of foreign language education, but also for broader understanding of the importance of career counseling for adolescents.

The U.S. Teacher Shortage

Currently, teacher shortages are found in many different areas such as special education, science, and mathematics (Bradley, 1999). Both Bradley (1999) and the American Association for Employment in Education (2003) classified bilingual educa-

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tion and Spanish as a foreign language (FL) as disciplines faced with significant problems. Region 3 (Montana, Wyoming, Colorado, and New Mexico) was characterized as experiencing considerable shortages in both these fields. A recent report in Wyoming reviewed all content areas taught in the state and found that 10.95% of all Wyoming FL teachers were non-certified or teaching outside of their areas (Stowers, 2004).

We posit that the shortage of FL teachers involves the following five factors: retirement, attrition, increased enrollments, legislation, and perceptions of teaching.

Hussar and Gerald (1996) found that 24% of the total K-12 teaching population in the US would retire or be able to retire by 2005 because 29.4% of public school teachers would be 50 years old or more (National Center for Education Statistics, 2002). Specific to French education, Spencer (2003) found The American Association of Teachers of French expected that “in coming years, the rate of retirement among French teachers will escalate even more rapidly than it has been doing so far” (p. 47).

Teacher attrition, a second factor, contributes to the problem and, in turn, increases the need for more teachers. A report published by the National Commission on Teaching and America’s Future (2002) found that “almost a third of America’s teachers leave the field sometime during their first three years of teaching, and almost half leave after five years” (p. 4). For those who enter the teaching profession through some alternative pathway, such as emergency certification, the attrition rate can be as high as 60% (Darling-Hammond, Berry, & Thoreson, 2001) within the first two years of teaching (Lauer, 2001; Raymond, Fletcher, & Luque, 2001). These findings include both general and FL educators. Disappointingly, “little has been published specifically on attrition of foreign language teachers” (Wilkinson, 2000, p. 1), although Konanc (1996) studied teachers in North Carolina and discovered that the attrition rate of FL educators (22%) was slightly higher than the rate for their colleagues in other areas (15-18%).

A third factor that is instrumental in explaining the shortage of FL educators is increased enrollments. Draper and Hicks (2002) found that secondary modern FL enrollments (Spanish, French, German) had increased nationally from 16.3% of the total enrolled in FL in 1890 to 42.5% in 2000. Specifically, Spanish enrollments had been steadily climbing since 1964. Unfortunately, the number of FL teachers has not increased to meet this demand. In Montana, one of the states cited by the American Association for Employment in Education as having a shortage of Spanish educators, Nielson (2001) found that the mitigating causes for the shortage were increased enrollments combined with FL teacher attrition and a high number of teacher retirements.

Clearly, the shortage of FL educators is a complicated issue. Nevertheless, recent legislation, a fourth factor to consider, has made matters worse. In 2001, the Bush administration proposed sweeping educational reform when No Child Left Behind (NCLB) was unveiled and enacted into law with overwhelming bipartisan support. As the states began to work with this new massive piece of legislation, students and teachers were asked to be accountable for their learning via standards-based education. The law

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requires all teachers in federal core academic areas, of which FL is one, to meet “highly qualified” criteria established by the U.S. Department of Education. This requirement is problematic because FL teachers who are licensed to teach in their respective states may find they are not considered highly qualified in the eyes of the federal government. In addition, NCLB

has prioritized instruction and allocation of resources to the core areas of reading, mathematics, and science (Rosenbusch, 2005; Rosenbusch & Jensen, 2004), which has resulted in an undervaluing of subjects like FL.

Additionally, state legislatures and policy makers have sometimes exacerbated the shortage of certified teachers. In 1999, the Wyoming Legislature passed the Wyoming School Improvement law that states: “Not later than the 2002-3 school year, all school districts shall provide instruction in foreign language to all students in kindergarten through grade two in accordance with standards promulgated by the state board of education” [sic] (School Improvement Act, 1999, p. g). Several years later, Wyoming House Bill 0170 was proposed and passed to extend the 1999 legislation to include grades 3-6. This new legislation requires elementary educators to prepare and teach additional subject matter for which many are not certified inasmuch as elementary FL certification does not exist in Wyoming.

FL Recruitment Initiatives

Research focused on countering the recruitment and retention problems created by the above four factors is scant. Draper (1991) expressed concern about the lack of effort to address the crisis, warning that few states were in a position to know whether to expect a teacher shortage. There are still very few active initiatives investigating the best method to attract and keep FL instructors.

One endeavor, sponsored by the Alabama Association for Foreign Language Teachers, was reported by Spencer (2003). The organization encouraged French teachers to invite their best students to attend AAFLT annual meetings. High school students had the opportunity to meet with other students and teachers from around the state to find out more about the teaching field.

Citing a less proactive approach, Scheetz (1995) reported that active strategies to recruit FL teachers include only putting on career fairs, posting job vacancies on the Internet, and identifying qualities of the “best, brightest, and most talented new staff” (p. 10). Thus, Long (2000) suggests that post-secondary faculty must be proactive in K-12 recruitment, especially given that FL teaching positions are the most difficult to fill, well above special education, math, and science (Murphy, DeArmand, & Guin, 2003).

Perceptual Factors

The fifth and final factor viewed as contributing to the shortage, perceptions of teaching, may be difficult to quantify since what people do may not reflect how they feel. But, vocational perception may nevertheless represent a formidable factor to consider when investigating the shortage of FL educators. After all, teaching has been described by some as a dead-end job with a perceived low-status, poor working con-

ditions, lack of control over how schools are run, ineffective administrative support, low salaries, classroom discipline issues, a lack of induction and mentoring, and frustration with colleagues (Boles, 2000; Boser, 2000; Brunetti, 2001; Stanford, 2000; Weld, 1998). Other barriers such as inadequate classroom management skills, large classes, work schedules, feelings of isolation in the classroom, and insufficient preparation for dealing with cultural diversity in schools all contribute to producing high levels of stress for first-year teachers (Fideler & Haselkorn, 1999).

Because these educators are leaving the profession for a myriad of reasons and current legislation is not attempting to retain or recruit more language teachers, an innovative FL teacher recruitment project for rural U.S. secondary students in Spanish classes was created and its impact will be reported in the remainder of this article.

First, the research methodology will be presented through a description of the approach used to change student misconceptions about teaching within the context of FL education. Results from the present study are followed by a discussion of the broader implications of such a FL teacher recruitment approach, not only for Spanish, but also for other FLs, as well as other professions.

Methodology

Theoretical Framework

Two distinct theories helped guide this research. The first posits that individuals begin to crystallize a vocational preference between the ages of 14 and 18 (Super, 1990). During this period, adolescents begin to formulate ideas about appropriate work and begin to develop occupational self-conceptions that will guide educational decisions. Thus, we selected secondary students attending daily Spanish classes in grades 9-12 for this study.

The Conceptual Change Model (CCM), which is based on Piaget's ideas of assimilation, accommodation, and disequilibrium (Posner, Strike, Hewson, & Gertzog, 1982; Strike & Posner, 1992), is the second theory framing this research project. CCM is a method of presenting science concepts to students in classrooms that seeks to restructure meaning by replacing existing conceptions with new ones, emphasizing the importance of a student's conceptual ecology in controlling the process of change. For conceptual change to take place, students must reevaluate their existing knowledge and restructure existing concepts.

CCM proposes that if students are to change their ideas, four conditions must be met. First, they must become dissatisfied with their existing knowledge. Second, the new concepts must offer a more understandable explanation. Then, the new concept itself must meet three criteria: it must propose solutions to problems, be compatible with knowledge in other related areas, and be plausible. Finally, the new concept must lead to new insights and have potential for new discoveries.

CCM places students in a setting that encourages them to confront their own preconceptions and those of their peers, then work toward resolution and conceptual change through a six-stage process (Stepans, 1996).

1. Students become aware of their own preconceptions about a concept by thinking about it before any activity begins.

2. Students expose their beliefs by sharing them, initially in small groups and then with the entire class.
3. Students confront their beliefs by testing and discussing them in small groups.
4. Students work toward resolving conflicts (if any) between their ideas (based on the revealed misconceptions and class discussion) and their observations, thereby accommodating the new concept.
5. Students extend the concept by trying to make connections between the concepts learned in the classroom and other situations, including their daily lives.
6. Students are encouraged to go even further, pursuing additional questions and problems of their choice related to the concept.

Researchers

My (first author) interest in FL teacher identity and socialization practices is influenced by my 15 years teaching Spanish in high schools and community colleges in two western states. Working in rural public schools as an educator gave me the opportunity to interact directly with students in academic and vocational contexts. During my doctoral program at the University of Wyoming, I met and studied with Alan Moore (second author) who specializes in educational research methods, statistics, and measurement. Together, we utilized our respective strengths to conduct this study.

Method

Since the university research involved secondary students, we submitted and received institutional review board approval to conduct this research in rural secondary schools in order to answer the research question: Will students be more likely to consider becoming FL teachers if they are educated about the benefits of becoming a teacher? Next, we contacted FL educators and administrators in five schools and gained their permission to conduct our study in their buildings. Being teachers ourselves, we were concerned about the loss of instructional time. The FL educators in charge of these students assured us that student learning would not be adversely affected because they planned to modify their lessons each week as needed.

To begin the research process, we reviewed the literature regarding reasons for people's decisions about the career of teaching. Following this research, discussions with high school students studying FL from the first of five selected schools took place, and these informal dialogues focused on the same topic.

From the review of the literature and the student discussions, a survey questionnaire (see Appendix A) using a 5-point Likert scale (1 — Strongly Disagree to 5 — Strongly Agree) with a participant demographic sheet was developed for implementation as a pretest and as a posttest. The instrument

was designed to test possible changes in students' perceptions of 12 dependent variables: (1) adequacy of teacher salary, (2) teacher stress levels, (3) desire to become a teacher, (4) length of teaching contracts, (5) respect and low status of teachers, (6) societal importance of teaching, (7) requirements for becoming a teacher, (8) misconceptions about NCLB, (9) school safety issues, (10) insecurity about finding a

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job as a FL teachers, (11) insecurity about own FL ability, and (12) questions related to the need for life-long learning of FL. A paper version of the instrument was field-tested on two classes of secondary FL students from the second school and was subsequently modified to ensure content validity and reliability.

The data gathered from the first two schools were used to verify the constructs and to test the instrument; these data were not included in the study for two reasons. First, we felt that the student responses from the first school could lead to a biased view. Second, the survey was modified after the pilot test, making some of the survey statements slightly different. Therefore, the data would not have been deemed comparable. Later, we developed lesson plans to teach about the 12 constructs being investigated.

Once ready to begin the experiment, we made schedules to visit each of the three remaining schools five times, once per week on the same day and time, to gather initial data from the pretest. During the three weeks of presentations (treatments), we delivered lectures, engaged students in discussions about the information presented from the lectures, and encouraged the students to seek supplementary information regarding the topics being discussed. The topics for week one were low salary, the parameters of a typical year-long teaching job, and student insecurity about finding a job teaching FL. The second week we focused on teacher stress levels, students' interest in becoming FL educators, their misconceptions about the requirements for becoming a teacher, and their insecurity about their own language skills. The final week of the treatment dealt with respect and low status, the societal importance of FL education, and students' misconceptions regarding school safety. The final two constructs of interest, misconceptions about NCLB and life-long learning of FL, were threaded discussions throughout the three treatments.

The first and last week were used to assess students' perceptions of FL teaching and education using the survey. During the three weeks after collecting the preliminary data, we conducted lectures and discussions to present to the students factual information about FL teaching and the profession.

Population

As noted above, the students in the three secondary schools who participated in this study were those who had neither helped identify the constructs of interest nor seen the survey prior to the pretest. The school districts were composed of students sharing similar ethnic and socioeconomic backgrounds. The research focused on first-year Spanish classes because these classes typically can contain a variety of students from freshmen to seniors within the same class, and Spanish classes traditionally tend to have higher enrollment than other FL classes. Similarly, these introductory classes tend to be much larger in student-to-teacher ratios than second- or third-year Spanish courses. Demographic data showed that the majority of the participants in this study were Caucasian (81%) ranging in age from 14 to 18 years, females (56%) slightly outnumbered males, and most were freshmen and sophomores (78%).

“Students learned about salary schedules, benefits packages, tax benefits and deductions...”

Treatments

Within each of the three schools, two Spanish classes were used for the study: one experimental classroom that received the treatment (lectures and discussions) and one control group that did not receive the treatment, only the pretest and posttest. Both classes took the same pretest and posttest. The experimental classrooms were assigned randomly by a flip of a coin. To reiterate, the treatment for the experimental classrooms occurred once a week for three weeks.

Each of the treatment classrooms participated in educational lessons about the profession of education and becoming a teacher. Students learned about salary schedules, benefits packages, tax benefits and deductions offered via laws enforced by the Internal Revenue Service; the social impact of becoming a teacher; the shortage of foreign language teachers; assessing their own knowledge of Spanish and lifelong learning; and the future job market. We also made students aware of the actual (as opposed to perceived) drawbacks to becoming a teacher, such as low status, low wages, concerns with discipline in the classroom and safety, the lack of administrative support, and other issues cited in the review of the literature and the initial student inquiry. We simply taught students about the profession and their potential to become FL educators.

After the final treatment was administered, we told the students that we would return the following week to gather their perceptions about FL education. The last week of the study, we returned to the schools on the usual day and administered the posttest. Once the posttests were collected, we asked the students to share their feelings about investigating a career as a foreign language teacher.

Data analysis

The data were analyzed using SPSS 13.0. Means and standard deviations were calculated for treatment and experimental groups at pretest and posttest. Tests of the effectiveness of the treatment were conducted using a 2 x 2 repeated measures factorial design. The between-subjects factor was membership in either the treatment or control group, and the within-subjects factor was pretest or posttest. The test of the interaction between these factors tests the hypothesis that the changes in the two groups are different. A significant effect typically means that the experimental group changed more between pretest and posttest than the control group.

Results

Pretest and posttest data were entered into SPSS for data analysis immediately after collection. Since possible differences among schools were not the focus of this research, only the differences in students' perceptions on the 12 dependent variables are discussed in this article. Changes in student perceptions were marked by a statistically significant difference between the control and experimental groups in student response changes from the pretest to the posttest. Mean changes discussed here represent positive and significant perceptual change indicating that the treatment — our discussions and instructional presentations — helped correct prior beliefs.

Table 5 shows the means and standard deviations for the pretest and posttest results of all 12 variables (Appendix B), and the interaction plots showing perceptual

change are displayed in Appendix C. The interaction plots graphically illustrate the changes in mean between the two groups (control and experimental) for the time of testing (pretest/posttest). These visual representations are included because they help show the change of student perception over time for each group. The week each construct was addressed is denoted in parentheses after each construct title followed by the Cronbach's Alpha reliability coefficients.

According to the literature, teacher salary appears to be one of the main reasons people decide not to become a teacher or decide to leave teaching for a different profession. The researchers' discussions with students in the treatment groups included information on the adequacy of a teacher's salary (through presentation of actual teacher salary and benefit schedules), on special tax benefits afforded to teachers that help reduce taxable income, and on special discounts offered to educators by various known computer companies, cellular phone services, and bookstores. To measure this construct, students were asked to respond to the following three survey items:

- Becoming a teacher would cost me too much money.
- Teachers receive less special benefits than other jobs.
- A teacher's salary is too low to be able to pay off college loans.

The change in perception for the construct of adequacy of teacher salary of the experimental group was significantly greater than the change for the control group ($F=32.09, p < .001$). Table I shows the results of the repeated measures ANOVA conducted for the construct Adequacy of Teacher Salary.

Table I ANOVA summary table for adequacy of teacher salary

Source	df	SS	MS	F	P
Between subjects	95				
Group	1	121.92	121.92	22.61	<.001
Error (between)	94	506.75	5.39		
Within subjects	96				
Time of testing	1	129.51	129.51	55.55	<.001
Time X Group	1	74.83	74.83	32.09	<.001
Error (within)	94	219.15	2.33		
Total	191				

The data indicated that the perceptions of students in the experimental group changed in a positive manner after exposure to accurate information on teachers' salaries and benefit packages. A graphical representation of this change in perception, found in Figure 1 (Appendix C), shows a significant change in mean scores for the

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experimental group and little change for the control group from pretest to posttest. The control group ($M = 9.21$) and the experimental group ($M = 8.86$) began the study with similar means reflecting student perceptions of teacher compensation. However, following the three treatments, the control group ($M = 8.81$) perceptions had not changed significantly, whereas the experimental group ($M = 5.95$) showed dramatic conceptual change regarding teacher salaries and benefit. The change in mean score is reflected as a decrease for this construct only, because the Likert items measuring the construct were worded negatively. The other constructs reported show positive change in means. Interestingly, this construct had the most dramatic student perceptual change of all those tested.

Next, we examined student misconceptions about the advantages of becoming a FL educator, such as the length of a teacher's annual contract, because many students believed that teachers worked year-around even though school was not in session. During the treatment sessions, students in the experimental groups were informed that presently there are no year-around schools in Wyoming; all schools, even charter schools, usually begin in August and terminate for the academic year in May.

In a related vein, many students thought that their teachers continued to work on school-related tasks throughout the summer months and were paid for their effort. We showed the experimental groups copies of various policy manuals from Wyoming schools indicating the number of contract days for which educators work and receive pay (approximately 182 days per year). Furthermore, we explained that teachers usually work approximately nine months and have three months for other activities or another job. Moreover, we discussed some special tax benefits for which teachers are eligible and the societal impact teaching has on society because teachers can be role models and mentors for children.

As the lectures continued, many students were surprised that their teachers enrolled in classes, during the school year as well as during the summer months, to learn more about their content areas and to earn additional college credits in order to maintain their state licensure. Additionally, the experimental group learned that many teachers had summer jobs to offset living expenses. A third revelation was that many teachers choose to be paid over 10 months instead of 12 in order to bank money during the school year to pay their summer expenses.

Another topic addressed was the benefits of travel for FL educators during the summer months. The students were amazed that their Spanish teachers traveled to Spanish-speaking nations for several reasons, one being the opportunity to refine their second language (L2) abilities and to find new materials for the upcoming academic year to be used in class. Data analysis of the following survey items,

- I feel that teachers get paid during the summer when they are not working.
- I think many people do NOT understand the advantages to becoming a teacher.

showed perceptual change. As shown in Table 2, students' perceptions in the experimental groups changed significantly whereas those in the control groups did not ($F = 20.11, p < .001$).

Table 2 ANOVA summary table for FL teacher job advantages

Source	df	SS	MS	F	P
Between subjects	95				
Group	1	17.37	17.37	7.56	<.001
Error (between)	94	215.96	2.30		
Within subjects	96				
Time of testing	1	14.87	14.87	13.91	<.001
Time X Group	1	21.49	21.49	20.11	<.001
Error (within)	94	100.50	1.07		
Total	191				

Figure 2 (Appendix C) shows a graphical representation of the change in participant response from pretest to posttest. The interaction plot shows that both the control group ($M = 6.21$) and the experimental group ($M = 6.14$) started with similar perceptions about the advantages of being a FL educator. However, after the treatments, the mean for the control group ($M = 6.09$) remained close to the initial pretest finding, whereas the mean for the experimental group ($M = 7.37$) changed significantly, again indicating positive signs of conceptual change.

The third dependent variable found to have changed significantly from pretest to posttest for the two groups was the value of taking FL. Unlike the first two discussed above, this construct was not isolated to only one treatment discussion; it was threaded throughout the three treatment sessions. During the treatments, students were informed about the reasons their teachers continue to take college classes: (1) to maintain their teacher certificates, (2) to ascend the salary schedules, and (3) to enhance their content knowledge.

Additionally, students were made aware of the many benefits they could enjoy once they become fluent in Spanish: (1) enhanced job opportunities, (2) traveling throughout the Spanish-speaking world without the need of a translator to see the sites and experience the culture they have been learning about in their Spanish classes, (3) communication with approximately 7% of the world's population. To measure this construct, we asked students to rate their feelings on the two following items from the survey:

- I'm taking Spanish because my parents are forcing me.
- I want to make Spanish a part of my life for many years to come.

Information gathered during the project-development phase discussions with the students in the first school indicated that FL students failed to recognize the benefits of fluency in a second language. Many believed that being a monolingual English-speaker

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was easier and being bilingual did not have many advantages. After the discussions about the advantages bilingual people have in the job market and in life, student perceptions showed evidence of positive change. Data analysis, shown in Table 3, illustrates an actual statistical difference for both time and group effects ($F=4.63, p<.05$). Mean differences in student perception are represented graphically in Figure 3 (Appendix B).

Table 3 ANOVA summary table for value of taking FL

Source	df	SS	MS	F	P
Between subjects	95				
Group	1	5333.48	5333.48	2338.92	<.05
Error (between)	94	214.35	2.28		
Within subjects	96				
Time of testing	1	6.37	6.37	13.41	<.001
Time X Group	1	2.20	2.20	4.63	<.05
Error (within)	94	44.63	.47		
Total	191				

Of the 12 under investigation here, the fourth construct that changed significantly from pretest to posttest between the experimental and control group was operationalized as the Societal Importance of FL Education. We talked to the students in the experimental classrooms about the importance of FL education in today’s society by showing U.S. census data. Students learned about the increasing number of non-English-speaking monolingual people from Spanish-speaking nations residing in the U.S. Likewise, students were encouraged to discuss American teachers’ roles from a societal perspective. The roles educators play in our global society and the impact of U.S. leadership in many areas were noted.

Additionally, students were shown how much time their teachers spend with them on a weekly basis, both in the classroom and in extracurricular activities. We showed students that teachers spend much of their time and effort to prepare students to become capable, productive citizens in today’s society. Both of us provided examples of former students who visited us long after being in our classrooms to talk about how we, and other teachers, had impacted their lives. Students were asked to remember the past December holiday vacation and how many of the previous year’s graduates returned to their respective high schools to visit their teachers. To measure student perception about the role of FL educators for the construct of societal importance, students were asked to respond to the following three statements:

- I feel that teaching is very important to building a better America.
- Making a big impact on society is very important to me.
- I feel that teachers make little impact on their students.

Table 4 shows the statistical difference for both time and group effects ($F=7.75, p<.01$).

Table 4 ANOVA summary table for societal importance

Source	df	SS	MS	F	P
Between subjects	95				
Group	1	17088.56	17088.56	6338.07	<.01
Error (between)	94	253.44	2.69		
Within subjects	96				
Time of testing	1	.13	.13	.09	.77
Time X Group	1	11.61	11.61	7.75	<.01
Error (within)		94	140.87	1.49	
Total	191				

Again, the experimental ($M = 9.63$) and control ($M = 9.39$) groups at pretest show about the same numeric rating to the survey statements. However, at posttest, the control group decreases ($M = 8.85$) and the experimental group increases ($M = 10.07$), indicating once again a positive change in perception from the treatment. Figure 4 (Appendix C) shows an interaction plot that graphically displays the change in student perception.

Data analysis of the remaining eight constructs tested during this research, (1) desire to become a FL educator, (2) misconceptions about the requirements for becoming a FL teacher, (3) student feelings of L2 insecurity, (4) teacher respect and status, (5) school safety, (6) misconceptions about NCLB, (7) student qualms about finding a job as a FL teacher, and (8) the stress level associated with being a FL educator, did not indicate statistically significant changes for the interaction of time of testing (pretest/posttest) and group affiliation (control/experimental). However, the final two dependent variables listed above (#7 and #8) showed statistically significant change for time of testing (pretest/posttest) but not for group affiliation (control/experimental).

Discussion

The purpose of this study was to investigate and understand secondary students' perceptions about becoming a FL educator. This inquiry sought to answer the research question: Will students be more likely to consider becoming a FL teacher if they are educated about the benefits of becoming a teacher? Positive results from this research study have been reported in the previous section and are discussed here.

For many of the students in the treatment classrooms, we could clearly track student ability to evolve through Posner et al.'s (1982, 1992) Conceptual Change Model. An environment for discussion and learning was established to create dialogue and understanding between the students and us. This environment helped students think aloud by listening to others discuss their conceptions of FL education. The goal was not to get students to arrive at consensus, but rather to create an opportunity to verbalize and listen to other points of view.

For example, during the first week of treatments in which teachers' salaries and benefits packages were discussed, it was apparent that students became aware of their own preconceptions. We helped students expose their beliefs by engaging them in small group and class discussions. As the students were exposed to legitimate information, they confronted their beliefs by talking with other students and even with their Spanish teachers. As the discussions proceeded, the new knowledge was integrated into their belief systems. Near the end of the first treatment, students were encouraged to search for teachers' salary schedules on the Internet to verify the information that we had given them during the treatment. Rather promptly, students holding incorrect conceptions began to abandon these beliefs.

In all three of the treatment classrooms, after the students were shown the salary schedules, they began to broaden their knowledge base by asking about the differences found in each of the 48 Wyoming school districts. Students knew that some counties were more economically advantaged than others. They began asking us questions about which districts sat on the two poles of the salary/benefits continuum. Consistent with Piaget's notion of accommodation and assimilation of information, students began to restructure their knowledge regarding teacher income. This was not only true of the first week's treatment session; it was consistent throughout the study.

Furthermore, we found that some students continued to investigate independently whether the information presented in class was factual or not over the course of the three treatment sessions. Several students remarked during the study that they had met to talk to their parents and other teachers about the topics and information discussed during the treatments. Once the students realized that they were receiving factual information, a level of trust was established between the participants and us.

This faith in receiving valid and reliable information solicited more in-depth questions from students about FL education and teaching as the treatments progressed. While we made every attempt to keep professional distance from the participants in order to avoid biased results, many of the students asked us personal questions about our teaching careers in terms of salaries, job advantages, preservice teacher requirements, and professional frustrations once we became educators. We answered all questions honestly and attempted to give students a first-hand view of education. The information presented from a variety of sources became valuable to the students and helped them co-construct knowledge about FL teaching in an investigative environment.

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After being presented with new concepts and data to support those ideas, students showed definite signs of new learning. They appeared to understand better the teaching vocation and began to apply this new knowledge beyond the classroom discussions. For example, when discussing the safety of being a teacher, students applied the given information to different contexts such as rural versus urban educational settings. Students began to theorize about differences between schools and the diversity of factors that help

to create a safe or dangerous learning environment for students in America's schools. The process that students work through, as conceptualized by the CCM, was found to be recursive and not linear: as students confronted new ideas, they shared their ideas with peers, re-shaped their conceptions, and began to accommodate this new information before extending it to other situations. Students would revert to prior stages proposed by the model to verify their understandings. Thus, from a theoretical standpoint, the present research tended to support the Conceptual Change Model.

This research did not merely help show that some student misconceptions can be corrected by presenting factual information; it also has vocational counseling implications. Our research worked with 12 constructs that students and the literature identified as problematic for teachers and those thinking of becoming teachers. During the study, we discovered that students felt they did not receive enough career counseling at their schools. Many stated that misconceptions and lack of factual, first-hand information about careers sometimes discourage students from considering many occupations in which they might have talent or even interest. The students claimed that this was particularly true when this information came from people not currently in those career fields. Students and teachers alike expressed appreciation for learning more about one specific occupation from a career teacher.

In addition to learning that students and teachers felt strongly about the need for more vocational counseling in schools, we saw promise for this type of research and its practical application during our final meeting with the students. Students were reminded of the purpose for this study and were shown the statistical results from the pretest and posttest data. Equally as important, we explained what the statistics were telling us, that a significant change in mean from the pretest to the posttest indicated positive change in students' beliefs, and that with the provision of factual information, students corrected misconceptions and had a better basis on which to make career choices. Following presentation of our rationale for this study, we asked both groups in all three schools two questions:

1. How many of you thought you might investigate a career as a FL teacher before we met you a month ago?
2. How many of you think you might investigate a career as a FL teacher now?

Three students in the entire sample, one from the experimental groups and two from the control groups, expressed interest in becoming a FL educator at the beginning of the study.

Student response to the second question offered hope for using this approach for FL educator recruitment purposes. From the control groups, the same two students raised their hands. However, from the experimental group, fifteen students raised their hands. Therefore, before leaving the schools for the final time, we provided all six classrooms with our contact information, copies of the FL teacher preparation program of study at the University of Wyoming, and the website address where university admission application forms could be obtained. Later, four of the FL teachers who permitted this research to be conducted in their classrooms contacted us and requested more information about the FL teacher preparation program for their students and their students' parents.

“Offering students more vocational information during this time in their lives may thus be an effective approach.”

Clearly, from our perspective, this investigation yielded positive results. First, initial discussions with students at the onset of this study revealed that not only were the students misinformed about FL education and teaching, they had numerous reasons for their opposition to teaching as a career that confirmed and contributed to the literature base. This finding has implications for other professions currently experiencing shortages of personnel. It appears that the provision of accurate information by professionals can create a more positive view of

careers that student misconceptions may have prevented them from considering.

Secondly, this study helped support Super's (1990) theory about career crystallization between the ages of 14 and 18. An informal poll of raised hands during the posttest data collection showed that almost half (46%) of the students (mean age 15.47 years) still were not sure about their career plans. Students indicated that they were casually thinking about possible careers and were unsure of where they could obtain more information. Offering students more vocational information during this time in their lives may thus be an effective approach.

Lastly, this study demonstrates that misconceptions can be corrected by working directly with students in schools. Even though the present investigation was limited to secondary students studying Spanish, we stress the impact that our findings may suggest for other professions. Perhaps people's misconceptions hinder growth and thus contribute to shortages in other professions. Armed with factual information, people who first were unlikely to enter certain careers might consider them. We call for more research with students to test the validity of this method and we also advocate programs to help offer solid, factual career information to students so they can become better informed about many different professions as they begin to crystallize their career choices.

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Appendix A Survey of the Perceptions of FL Students

How well do these statements describe your feelings regarding teaching at this moment? Please circle the letter that best expresses your opinion for each statement using the scale below from Strongly Disagree to Strongly Agree.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. I feel that getting a degree in Spanish and Education in college is a good combination to find employment after college.	SD	D	U	A	SA
2. Teachers receive fewer special benefits than other jobs.	SD	D	U	A	SA
3. Education has too many problems to make me want to become a teacher.	SD	D	U	A	SA
4. If I were to teach, I would want to teach at the high school level.	SD	D	U	A	SA
5. If I were to teach, I would want to teach at the elementary school level.	SD	D	U	A	SA
6. When I was younger, I wanted to become a teacher.	SD	D	U	A	SA
7. I feel that teachers make little impact on their students.	SD	D	U	A	SA
8. Becoming a teacher would cost me too much money.	SD	D	U	A	SA
9. I feel that there are few teaching jobs available right now.	SD	D	U	A	SA

Appendix A (Continued)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
10. Poorly behaved students discourage me from wanting to become a teacher.	SD	D	U	A	SA
11. A teacher's salary is too low to be able to pay off college loans.	SD	D	U	A	SA
12. Making a big impact on society is very important to me.	SD	D	U	A	SA
13. The problems facing education discourage me from becoming a teacher.	SD	D	U	A	SA
14. I feel that teaching is very important to building a better America.	SD	D	U	A	SA
15. I feel that teachers get paid during the summer when they are not working.	SD	D	U	A	SA
16. I feel schools are too dangerous for me to work in.	SD	D	U	A	SA
17. Teachers do not receive enough respect from the public.	SD	D	U	A	SA
18. I'm taking Spanish because my parents are forcing me.	SD	D	U	A	SA
19. I am thinking about becoming a teacher.	SD	D	U	A	SA
20. I think many people do NOT understand the advantages to becoming a teacher.	SD	D	U	A	SA
21. The new teaching standards make me NOT want to become a teacher.	SD	D	U	A	SA
22. I feel that I would like to know more about becoming a teacher.	SD	D	U	A	SA
23. I feel that students appreciate their teachers.	SD	D	U	A	SA
24. I want to make Spanish a part of my life for many years to come.	SD	D	U	A	SA
25. Becoming a teacher is too complicated of a process.	SD	D	U	A	SA
26. I feel inadequate about my language skills in Spanish and probably would not become a teacher because of that.	SD	D	U	A	SA
27. President Bush is correct, we need more qualified teachers.	SD	D	U	A	SA
28. I think that schools are safe places to work.	SD	D	U	A	SA

Appendix A (Continued)

Please complete the following information.

Age: _____

Gender: _____ male _____ female

Ethnicity: _____ Caucasian/white _____ Latino/a _____ African American
 _____ Asian _____ Native American _____ Other

Year in school: _____ freshman _____ sophomore _____ junior _____ senior

Thank you for taking the time to participate in my survey!

Appendix B**Table 5** Means and standard deviations for constructs by group and time

	Control (n=53)		Experimental (n=43)	
	M	SD	M	SD
Constructs that changed significantly				
Adequacy of teacher salary (1, $\alpha=.53$)				
Pretest	9.21	1.98	8.86	1.77
Posttest	8.81	1.93	5.95	2.16
FL teacher job advantages (1, $\alpha=.87$)				
Pretest	6.21	1.17	6.14	1.08
Posttest	6.09	1.36	7.37	1.54
Value of taking FL (1-3, $\alpha=.79$)				
Pretest	5.00	1.39	5.23	0.92
Posttest	5.15	1.26	5.81	0.98
Societal importance (3, $\alpha=.45$)				
Pretest	9.39	1.52	9.63	1.41
Posttest	8.85	1.42	10.07	1.42

Table 5 (Continued)

	Control (n=53)		Experimental (n=43)	
	M	SD	M	SD
Constructs that did not change significantly				
Finding FL job (1, $\alpha=.33$)				
Pretest	6.41	1.04	6.74	1.07
Posttest	6.13	1.39	5.95	0.84
L2 Insecurity (2, $\alpha=.70$)				
Pretest	2.72	1.06	2.86	1.06
Posttest	2.68	1.16	2.86	1.05
Desire to teach (2, $\alpha=.87$)				
Pretest	8.38	3.04	8.74	3.09
Posttest	8.28	3.05	9.09	3.08
Job Stress (2, $\alpha=.78$)				
Pretest	8.85	2.58	8.55	2.58
Posttest	8.57	2.69	7.63	2.60
Requirements (2, $\alpha=.55$)				
Pretest	8.60	1.50	8.44	1.16
Posttest	8.89	1.45	8.30	1.23
NCLB (1-3, $\alpha=.72$)				
Pretest	6.49	1.46	6.58	1.58
Posttest	6.55	1.62	6.77	1.09
Safety (3, $\alpha=.35$)				
Pretest	5.74	0.71	5.58	0.69
Posttest	5.75	0.70	5.76	0.57
Low respect (3, $\alpha=.48$)				
Pretest	6.24	1.22	6.32	1.08
Posttest	6.08	1.49	6.65	1.23

Treatment week in parentheses with Cronbach's Alpha coefficient

Appendix C

Interaction plots for statistically significant changes per construct of interest.

Figure 1. Adequacy of teacher salary

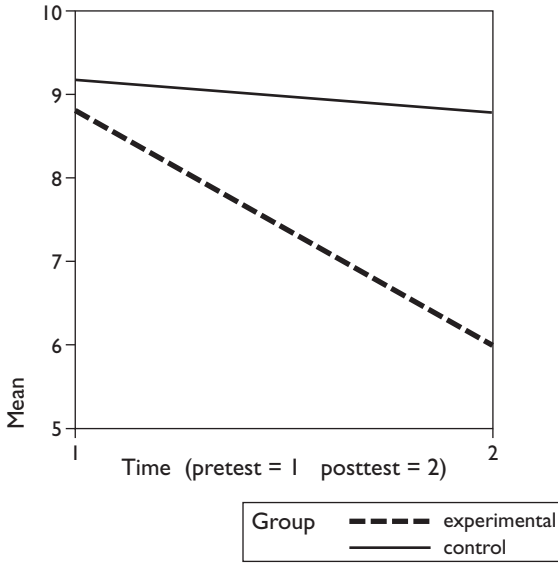
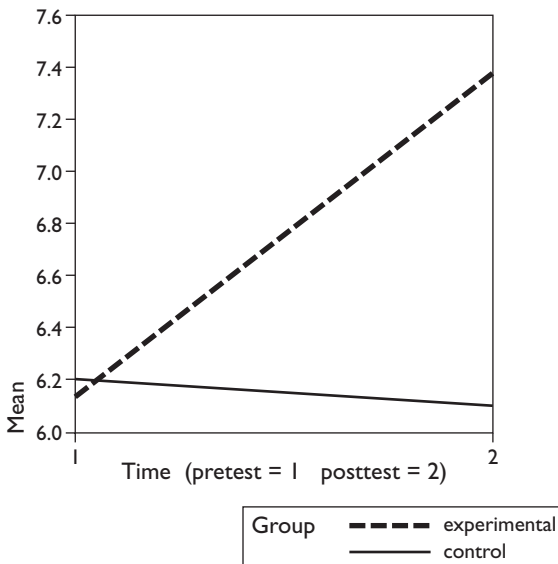


Figure 2. Job advantages



Appendix C (Continued)

Figure 3. Value of studying Spanish

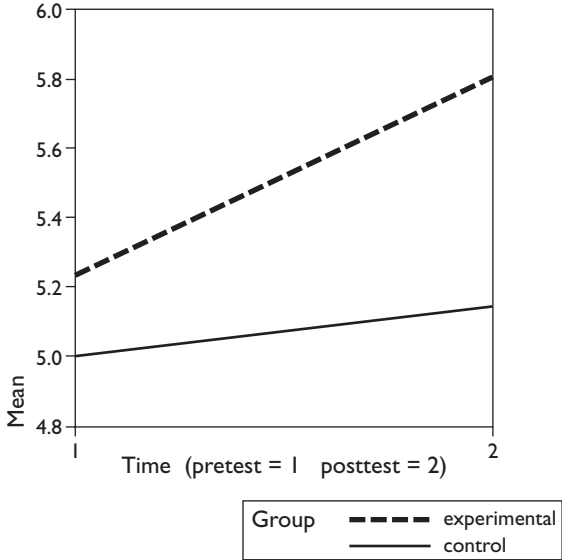


Figure 4. Societal importance

