
Efficacy and Interest Profile of Foreign Language Teachers During a Time of Critical Shortage

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Abstract

Teacher retention and recruitment is becoming a serious matter, specifically for foreign language educators. Five factors contributing to the shortage are discussed and two more are advanced: vocational interest and teachers' sense of efficacy. Citing a dearth of active FL educator recruitment initiatives attempting to arrest the problem, this quantitative study (n=80) established a vocational profile of an efficacious foreign language instructor using the Self Directed Search interest inventory (Holland, 1994) and the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk-Hoy, 2001). Correlational analysis of the two instruments indicated a stable profile for highly efficacious foreign language educators. This interest profile has serious implications for the identification of highly efficacious foreign language educators as a means for recruitment and retention.

Introduction

At the beginning of the Reagan administration in the early 1980s, researchers and organizations reported a severe teacher shortage in America's schools (Boe & Gilford, 1992; Darling-Hammond, 1984; Haggstrom, Darling-Hammond, & Grissmer, 1988; National Academy of Sciences, 1987; National Commission on Excellence in Education, 1983) and teachers of bilingual education and foreign languages (FL) topped the list in the 1983-84 survey conducted by the National Center for Education Statistics (Boe, 1990). It was predicted that due to increased enrollments and teacher attrition, the demand for new educators would prompt a lowering of professional standards for educators by offering alternative routes to certification, thereby allowing poorly qualified teachers to enter the profession. Subsequently, student academic performance would be compromised. Now, more than twenty years later, the teacher shortage continues to exist (American Association for Employment in Education, 2006; Draper & Hicks, 2002; National Center for Education Statistics, 2002) and reports of lower student achievement resound in the media.

When examining the teacher shortage and the supply of and demand for qualified teachers, it is important to note that there is debate about the shortage. Ingersoll

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(2003) suggests that there is a surplus of certified teachers who actively choose not to teach, while others continue to say that a shortage of teachers in many parts of the country exists regardless of the available teaching pool from which to draw (American Association for Employment in Education, 2006; Fideler & Haselkorn, 1999; Johnson et al., 2001). Still others feel that there is an uneven distribution of teachers (Wilson, Darling-Hammond, & Berry, 2001).

However, while the debate continues, teacher shortages appear to be prevalent in many different content areas such as special education, mathematics, science, bilingual education, and foreign language (FL) (Bradley, 1999) and FL teaching positions are reported to be the most difficult to hire for, well above special education, math, and science (Murphy, DeArmand, & Guin, 2003). Further, K-12 FL teachers left public school positions at an annual rate of 7% between 1993 and 1995 (Zoroya & Hartzell, 1999) and “this percentage will grow with anticipated foreign language teacher retirements” (Long, 2004, p. 1). Currently, the American Association for Employment in Education (AAEE, 2006) classifies FL as an area facing a national shortage.

Review of the Literature

Known factors contributing to a shortage

I suggest that the shortage of FL teachers stems from at least five factors: retirement, attrition, increased enrollments, legislation, and perceptions of teaching (Swanson & Moore, 2006). The AAEE (2003) reported that 24% of elementary and 26% of secondary teachers were 55 years old in the late 1990s and that the same percentage of elementary and secondary teachers can be expected to retire between 2005 and 2010. The same report also estimates that if student enrollments remain constant, more than 24% of the teachers at each level would need to be replaced in the next ten years.

The second factor, teacher attrition excluding retirement, is an equally serious matter. Nationally, “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” (National Commission on Teaching and America’s Future, 2002, p. 4), for reasons 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. Understandably, these factors produce high levels of stress, especially for first-year teachers (Fideler & Haselkorn, 1999). For those individuals entering the teaching profession through alternate routes, such as emergency certification, attrition can be as high as 60% (Darling-Hammond, Berry, & Thoreson, 2001) within the first two years of teaching (Lauer, 2001). Specifically in the area of FLs, the attrition rate for teachers in North Carolina (22%) and Georgia (11%) was slightly higher than the rate for teachers in other content areas (Georgia Professional Standards Commission, 2006; Konanc, 1996).

While the number of FL educators continues to decrease, FL enrollments in public secondary schools are increasing. From 1890 to 2000 modern FL enrollments in

FL courses (Spanish, French, and German) have increased nationally from 16.3% to 42.5%, with Spanish enrollments steadily climbing since 1964 (Draper & Hicks, 2002). Unfortunately, the number of FL teachers has not increased to meet this demand. In Montana, one of the states cited by the AAEE (2006) 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.

Adding to this already alarming issue, President Bush's No Child Left Behind initiative appears to contribute to the shortage of FL educators. The law requires all teachers in federal core academic areas, which now includes FL, to meet the "highly qualified" criteria. This new requirement is now problematic because FL teachers who were once licensed to teach in their respective states may find they are not "highly qualified" in the eyes of the federal government at a time of a national FL teacher shortage (Swanson & Moore, 2006). Additionally, No Child Left Behind has prioritized instruction and the allocation of resources to the core areas of science, mathematics, and reading (Rosenbusch, 2005; Rosenbusch & Jensen, 2004).

Further, state legislatures and policymakers have contributed to the lack 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. 3). Several years later, Wyoming House Bill 0170 extended the 1999 legislation to include grades 3-6. This new legislation requires elementary educators to teach an additional subject in an area for which many are not certified (Swanson & Moore, 2006).

Lastly, public perception of the teaching profession appears to be a factor that contributes to the teacher shortage. Teaching, in which nine out of every ten public school teachers are Caucasian and approximately three out of four are female (Latham, Gitomer, & Ziomek, 1999), has been described as being a dead-end job with a perceived low status, lack of control over how schools are run, low salaries, classroom discipline issues, and ineffective administrative support leading to a lack of induction and mentoring (Boles, 2000; Boser, 2000; Brunetti, 2001; Stanford, 2001; Weld, 1998).

Clearly, these five factors help explain why FL educators choose not to enter the profession or why they leave it. Unfortunately, a review of the literature reveals that there is a dearth of active initiatives to recruit prospective FL teachers despite concerns about the crisis (Draper, 1991). Scheetz (1995) reported that active strategies to recruit FL teachers include hosting career fairs, posting job vacancies on the Internet, and identifying qualities of the "best, brightest, and most talented new staff" (p. 10). While these strategies may work well to recruit those already in the FL education pipeline, there are even fewer documented strategies dealing with recruitment of talented individuals with

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second language abilities not in the pipeline. In a proactive approach to recruit secondary students, the Alabama Association for Foreign Language Teachers encouraged French teachers to invite their best students to attend the state meetings. There, the 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 (Spencer, 2003).

Two Additional Factors: Workplace Environment and Teacher Efficacy

I posit that (1) congruence of a person's vocational interests to the work environment and (2) teacher efficacy, a judgment about a person's belief about his/her ability to bring about desired outcomes of student engagement and learning (Tschannen-Moran & Woolfolk-Hoy, 2001), play additional roles in the FL teacher shortage. Farber (1991) estimated that between 5% and 20% of all teachers in the US will become "professionally exhausted" at some point in time and research indicates that educator burnout has been linked to perceived self-efficacy (Brouwers & Tomic, 2000). Further, Glickman and Tamashiro (1982) reported that educators who leave teaching have significantly lower scores on measures of self-efficacy than those who remain.

To that end, those with a high sense of teaching efficacy believe that difficult students can be teachable if the teacher exerts extra effort. However, teachers with a low sense of teaching efficacy think that there is little they can do to teach unmotivated students because students' success depends on the external environment (Gibson & Dembo, 1984). Subsequently, as educators begin to feel that they are less competent, they are more likely to perceive potential problems much bigger than what they actually may be (Brouwers & Tomic, 2000) and possibly develop negative attitudes that lead to attrition.

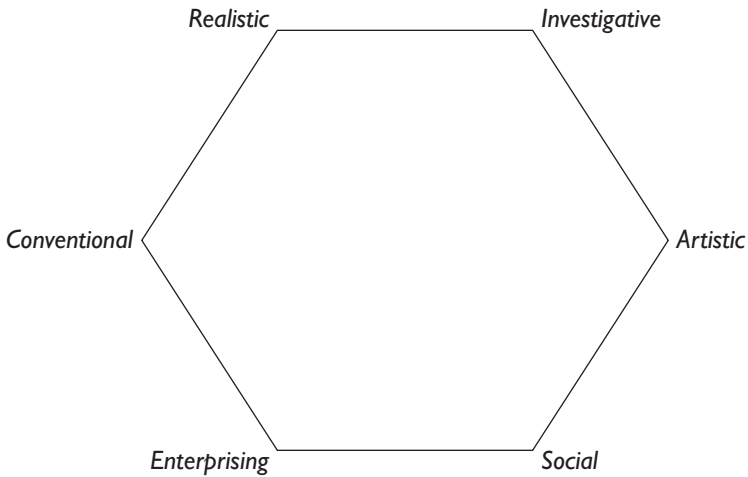
In addition to lower self-confidence in the classroom, I argue that much can be lost by measuring and reporting FL teacher efficacy as a solitary construct of interest because teaching appears to be "one of those rare jobs in which one's work is wrapped up in one's personality" (WELL Newsletter, 2000, p.3). The choice of one's occupation is an expressive act that reflects a person's motivation, knowledge, personality, and ability (Holland, 1997). For many, an occupation represents a way of life – an environment, rather than a set of isolated work functions or skills. Therefore, it is important to investigate the compatibility of a person's vocational interests with the work environment. To do so, a theoretical explanation is required.

Holland's (1997) theory rests on several key assumptions. First, most people can be characterized by their resemblance to each of six personality types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Second, the environments in which people live and work can be categorized using the same classification. Theoretically, for job satisfaction to occur, an individual's interests should match the workplace environ-

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ment's requirements of skills, interests, and competencies. To demonstrate his theory graphically, Holland uses a hexagonal model (Figure 1) to show the relationship among the six domains of the typology for both the workplace environment and a person's interests where opposite points on the hexagon indicate opposing interests and environments.

Figure 1. Holland Hexagon (Holland, 1997).



If an individual's two highest scale scores on Holland's Self-Directed Search (SDS) personality inventory (described later) are located on adjacent points (any adjacent two-point combination) on the hexagon, the person's vocational profile is consistent, leading toward stability of one's vocational interests. For example, a person with the two highest scale scores as Social and Artistic is consistent since the two domains are located next to one another. Contrarily, profile patterns composed of elements from opposite sides of the hexagon are least consistent, such as Realistic and Social. Patterns following other types are said to have an intermediate level of consistency. The more closely related the two highest scale scores are, the stronger the individual's vocational profile becomes.

The hexagon defines the similarity of the workplace in the same manner. For example, Social environments are said to be cooperative and helpful, whereas Realistic environments tend to be opposite, that is, workplaces that lack human relations ability (Holland, 1997). Holland's theory places teachers in the Social domain. According to this theory, Social individuals prefer activities that involve working with people in order to help educate, inform, or enlighten them.

Lastly, the hexagon defines the degrees of congruence between people and environments and can be used to predict the expected outcomes related to job satisfaction, achievement, and change in jobs (Holland, 1997). Holland theorizes that people search for environments in which to exercise their talents, express their attitudes, and take on agreeable roles. For example, the most congruent situation for a Social person would be within a Social environment. In the case of FL teachers, if disparity

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exists between the individual’s interests and the workplace, professional instability can lead to abandoning teaching as a career.

Holland tested this theory by conducting a study of 23,078 college freshmen and matched participants’ vocational aspirations to their vocational preference profile. Less than one-half of one percent of the sample (17 men and 117 women) aspired to become FL teachers, and this subgroup of the entire sample was found to have a Social, Artistic, and Enterprising profile (Holland, 1966). Of interest for this study, there was not a follow-up investigation to verify if those 134 college freshmen ever entered teaching FL as a profession, nor has there been a study to confirm the

classification using inservice FL educators.

Moreover, even with a large sample of undergraduates, a small number aspired to become FL educators, which is significant in light of the current shortage of FL teachers nationally (American Association for Employment in Education, 2006). Therefore, by studying FL teachers currently employed in schools, an accurate Holland vocational code can be confirmed empirically. Then, the code can be compared to teachers’ ratings of perceived efficacy teaching FLs to determine any significant correlations. Such an approach could have implications for recruitment and retention of FL educators because efficacy has been related to student achievement (Armor et al., 1976), student motivation (Midgley, Feldlaufer, & Eccles, 1989), teachers’ adoption of innovations (Guskey, 1988), and teachers’ classroom management strategies (Ashton & Webb, 1986).

Previous research joining perceived self-efficacy and vocational interests includes college students’ perceived self-efficacy with respect to occupations representing Holland’s six domains (Lapan, Boggs, & Morrill, 1989), gender differences for self-efficacy on Holland scales (Lenox & Subich, 1994), and attempts to predict college majors by using Holland interest themes and general confidence themes from The Skills Confidence Inventory (Betz, Harmon, & Borgen, 1996). However, there is not any research investigating the intersection of vocational interest and perceptions of self-efficacy for recruitment to professions, especially in the area of FL education.

In a novel approach to possibly identify and recruit more FL educators, I sought to answer the research questions: (1) What is the interest profile of FL educators currently employed? (2) What is the relationship between this profile and FL teachers’ perceived efficacy?

Method

Sample

During the 2005-2006 academic year, each school district ($N = 48$) in Wyoming was contacted to collect names and contact information for every certified in-service FL teacher — approximately 150 educators. Women ($n = 62$) in this study outnumbered

bered men ($n = 18$) and the participants were primarily Caucasian (74%) and Latino (24%). Eighty-eight percent taught Spanish or French with over 50% veteran teachers (6+ years of experience, $n = 50$). The majority (59%) reported having only a bachelor's degree and three reported having a doctorate.

The sample's demographics accurately represent Wyoming's demographics and national teacher demographics as well because the majority of public school teachers are Caucasian and approximately three out of four are female (Latham, Gitomer, & Ziomek, 1999). Interestingly, the AAEE reported considerable shortages in bilingual education and Spanish in the region where this study was conducted. Furthermore, in Wyoming 10.95% of all FL teachers were non-certified or teaching outside of their areas (Stowers, 2004).

Research instruments

The Self-Directed Search Form R (Holland, 1994a) is designed to help adolescents and adults make career and education choices that are aligned with their interests and abilities. This instrument has been tested over the years with a variety of groups to verify its integrity, especially in terms of gender and ethnic biases. When investigating possible differences between gender and various ethnic groups, the SDS Form R has been found to be consistent with the theoretical predictions (Benninger & Walsh, 1980; Holland et al., 1994b). Furthermore, its reliability and validity have been tested and found to be remarkable (See Holland et al., 1994a for specific information).

Form R is composed of the aforementioned six subscales that measure a person's interests and is easy to take (approximately 15-20 minutes) and score. Participants mark if they like/dislike certain activities, have/do not have certain competencies, and offer a self-rating of different skills. In order to determine the interest profile, an individual totals the number of items for each of the six domains. For example, to find one's Realistic score, add all of the Realistic items marked "Like" or "Yes" for Activities, Competencies, and Occupations sections as well as the two numbers circled for Realistic in the Self-Estimates section. An individual's interest profile is determined by rank ordering the totals for the six subscales from the highest (50 maximum) to the lowest (0 minimum). Holland (1997) recommends working only with the first three highest-ranked domains for smaller studies because extremely large samples are needed for empirical studies using all six classifications. The SDS is commercially used as a vocational preference inventory and the publisher does not allow reproduction of the instrument for scholarly use; therefore, is not part of this article's appendices. However, Holland's book (1997) contains the SDS in the appendices.

The second research instrument, the Ohio State Teacher Efficacy Scale (OSTES), developed by Tschannen-Moran and Woolfolk-Hoy (2001), is grounded on premises and studies conducted by Bandura (1997), Pajares (1996), and Tschannen-Moran, Woolfolk-Hoy, and Hoy (1998). I modified the OSTES by adding two questions about teaching introductory and advanced levels of FL. The original 12 items designed by Tschannen-Moran and Woolfolk-Hoy (2001) were not modified. The instrument's creators reported a high reliability coefficient² for the 12-item form (.90) and stated that the construct validity was measured successfully against other existing measures of teacher efficacy. High correlations were found for all measures and "the strongest

correlations between the OSTES and the other measures are with the scales that assess personal teaching efficacy” (Tschannen-Moran & Woolfolk-Hoy, 2001, p. 801). The survey used for this study (Appendix A) asks participants to rate their level of efficacy on each item using a scale from 1 (Nothing) to 9 (A great deal).

Administration of the SDS

I contacted the president of the Wyoming FL educator association for permission to gather data during the general session of the annual meeting. Additionally, I contacted non-attending FL educators in the state via phone calls, emails, and letters requesting participation in the study. Participants (total $n = 80$) were given a packet that contained five items: a consent form, a cover letter, the SDS and the Occupations Finder booklet (Holland, 1994b), and a demographics sheet. Those who did not attend the meeting were also given a postage-paid return envelope to return the items. Three surveys and demographic sheets were not filled out completely, so those participants were contacted and requested to complete the missing data points. Following data entry, I contacted the participants via email to give them their individual vocational profiles by which they could find specific information about their vocational profile using the Occupations Finder booklet. Also contained in the email was a short note followed by a link directing participants to the online version of the teacher efficacy survey.

Administration of the modified version of the OSTES

I created and tested for accuracy the online survey and database to collect participants' responses. Once satisfied with the data collection protocol, data from the participants who took the SDS were used to populate a list of participants who were given identification numbers. Additionally, each participant was assigned a unique password number to allow access to the online survey only once. To guard against incomplete data submission, the survey was designed so it could not be submitted electronically until all data fields were completed. Due to the straightforward nature of the online instructions and the brevity of the instrument (14 questions), I felt confident that the respondents would have little to no difficulty filling out the survey. However, the SDS is considerably longer and asks respondents to give answers to 228 statements so I followed Holland et al.'s (1994b) recommendation to give the instrument in person to groups in an effort to minimize participants' possible misunderstandings.

In the following section, I discuss findings from the two instruments separately to show their individual significance. Then, I present the findings from the merging of the two instruments. In the final section of the article I discuss the implications from this research project.

Results

Nine independent variables of interest were investigated: age, gender, ethnicity, FL taught, years of teaching FL, highest collegiate degree earned, foreign study abroad, perceived support from administrators, and perceived support from parents. Analysis of the demographic variables, beginning with gender, took place in the Spring of 2006,

to begin the development of the profile of an efficacious FL teacher. Each gender was evaluated in terms of independent variables. Women ($n = 62$) were found to be on average 43-year-old Caucasian Spanish teachers who have taught FL for almost 13 years and who have studied abroad for 12 months. Thirty-nine percent reported having a graduate degree with an education major and an additional 40.3% reported majoring in FL.

Males ($n = 18$) were found to be similar in terms of ethnicity and age. However, half reported having graduate degrees. Almost three-quarters of the men were Caucasian and indicated having studied abroad for an average of 39 months. Several of the males wrote comments next to their response about time studying abroad stating that they were church missionaries. In terms of time in the classroom teaching FL, men reported having taught for an average of 14 years, slightly above the 12 years reported by females. Men were found to teach Spanish (56%) and German (22%) predominantly, whereas women reported teaching primarily Spanish (77%) and French (16%). No significant difference was found between the sexes in regard to perceived support from parents and administrators.

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Self-Directed Search Findings

Before the SDS data were analyzed, an outside reviewer checked the accuracy of entered data points for each of the participants. The internal consistency of the instrument was evaluated, and the results indicated satisfactory instrument reliability. Values for the reliability coefficient were: Realistic (.93), Investigative (.89), Artistic (.89), Social (.86), Enterprising (.89), and Conventional (.92), indicating satisfactory instrument reliability. All of the coefficients were found to be consistent with other studies using the SDS (Holland et al., 1994a).

Next, means (numerical averages) and standard deviations³ were calculated first for the summary totals of each subscale (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) without disaggregating the data into groupings such as ethnicity and gender to determine an interest profile of the entire sample (see Table 1).

Table 1. Means and standard deviations for sample profile.

	R	I	A	S	E	C
Total (n=80)	1473	1587	2068	2822	2014	1946
Means	18.41	19.84	25.85	35.28	25.18	24.33
Standard Deviation	11.14	9.37	10.30	7.02	9.59	10.56

R=Realistic, I=Investigative, A=Artistic, S=Social, E=Enterprising, C=Conventional

The interest profile indicates that the sample consisted of Social ($M = 35.28, SD = 7.02$), Artistic ($M = 25.85, SD = 10.30$), and Enterprising ($M = 25.18, SD = 9.59$) individuals. These results confirm those of previous studies using the SDS, which have consistently classified teachers in the Social domain. People associated with this profile have a preference for activities that “inform, train, develop, cure, or enlighten” (Holland, 1997, p. 24).

Additionally, teachers tend to be imaginative, emotional, independent, open, and sensitive. These characteristics are among those that define Artistic people. Furthermore, the sample group comprises Enterprising individuals, who Holland (1997) suggests strive to become influential in public affairs, and who are adventurous, assertive, extroverted, resourceful, and optimistic people. The combination of all three of these domains began to define FL teachers’ vocational interests.

After determining the Holland code for the sample, the stability of the profile was juxtaposed to theory. According to Holland, Powell, and Fritzsche (1994), a differentiation of eight points, on a scale from zero to 50, increases the stability of the interest profile. The first profile clearly stood out by itself, then the second and third domains types were very close, followed by the fourth domain (Conventional). The total differentiation from the first to the sixth domain was 16.87, indicating a clearly defined and differentiated personality profile. Similarly, the environment for teachers tends to be clearly defined as well (Holland, 1997). Therefore, the participants’ interest profile was congruent with the work environment when comparing the profile to the Holland hexagonal model (Figure 1).

Furthermore, if a person’s profile domains are found to be adjacent to one another on the hexagonal model, this suggests that a person’s vocational preference is more predictable and stable. The sample profile domains (S-A-E) were located in an adjacent orientation to one another, which suggests that these people are more predictable in terms of vocational preference. Thus, teachers’ expertise, knowledge, training, skills, abilities, vocational values, and beliefs are supported in this educational environment. Moreover, this profile is consistent with Holland’s code for a “secondary school teacher (subject not specified)” (Gottfredson & Holland, 1996, p. 201).

Next, to substantiate the premise that the S-A-E profile is accurate, correlational coefficients were computed and analyzed to verify the relationships among the six subscales. Theory purports, as seen in the hexagonal model, that correlations should be low with personality domains found to be opposite one another on the Holland hexagon. The results from the correlational analysis show that 5 out of the 12 correlations were statistically significant. Additionally, the correlations for adjacent domains tended to be higher than the correlations for opposite domains, which offer support to the theory. In general, the results suggest that this sample’s profile, Social-Artistic-Enterprising, is a stable and consistent vocational profile.

FL Teachers’ Sense of Efficacy Findings

Once the SDS data were analyzed, work began on the teacher efficacy data in isolation before merging the two data sets. Of the entire sample for this study, 64 FL educators volunteered to fill out the online modified version of the OSTES.

Remember that the educators who filled out the OSTES also filled out the SDS; therefore, the same participant information was used for the analyses using the data already entered into SPSS for the Holland SDS data analysis. Even though only three-quarters of the entire sample filled out the online teacher efficacy survey, factor analysis (a statistical procedure that reduces a large number of questions in a topic area to a smaller number of basic factors) was permissible since Gorsuch (1983) recommends, “an absolute minimum ratio is five individuals to every variable” (p. 332).

In order to be able to analyze the data using the demographic data given earlier when the SDS data were gathered, the two files were merged. The emerging data set contained only those participants who filled out both research instruments. The 64 participants’ age ranged from 21 to 66 years with a mean of 43.14 ($SD = 11.59$). The inservice teachers had from 1 to 35 years of experience ($M = 14.01, SD = 11.57$). This sample included 50 Caucasians, 12 Latina/os, and 2 African Americans who taught Spanish (68.8%), French (17.2%), German (9.4%), English (3.1%), and Latin (1.6%). In terms of the highest collegiate degree earned, those FL educators reporting having earned only a bachelor’s degree (53.2%) outnumbered those with a master’s degree (42.2%) or a doctorate (4.7%). Additionally, more participants reported having studied overseas (67.2%) for an average of 11.40 months ($SD = 27.06$).

Reliability Coefficients and Factor Analysis

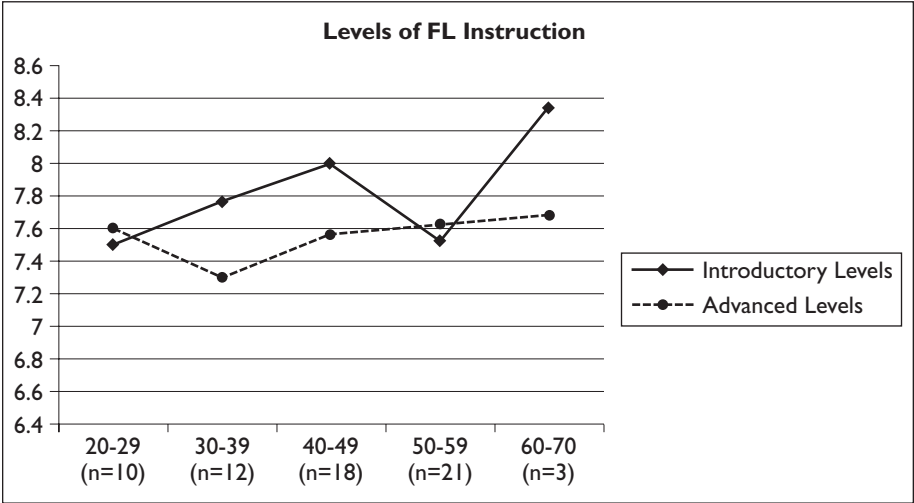
After examining the demographic data, reliability coefficients were computed to determine the reliability of the participants’ responses to the survey. The reliability coefficient for the modified OSTES was high (.82), indicating that the respondents’ answers to the survey were consistent. Then, I conducted factor analysis of the data, a statistical calculation that aims to boil down the 14 survey items to a smaller number of basic factors since current research demonstrates that teaching efficacy is comprised of three distinct factors, sometimes called dimensions: student engagement, instructional strategy, and classroom management (Tschannen-Moran & Woolfolk-Hoy, 2001).

During this factor rotation, the 14 questions from the survey were reduced to three factors with eigenvalues greater than one (a statistical value considered to be the minimum to substantiate that a factor exists), accounted for 67.65% of the variance in the respondents’ scores. Inspection of these factors showed that the three dimensions identified by Tschannen-Moran and Woolfolk-Hoy (2001) were present: (1) efficacy in student engagement (items 2, 3, 4, 11), (2) efficacy in instructional strategies (items 5, 10, 12, 13, 14), and (3) efficacy in classroom management (items 1, 6, 7, 8, 9). The two additional questions (13 and 14) related to level of FL taught loaded on the instructional strategy dimension.

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Once the three factors were identified, the overall sense of efficacy was examined and the sample reported having “quite a bit” of efficacy teaching FL ($M = 7.10$). In terms of perceived efficacy by dimension, the sample felt most efficacious for instructional strategy ($M = 7.51$) followed by classroom management ($M = 7.22$) and student engagement ($M = 6.38$). Interestingly, as the age of the teacher increased, the level of efficacy teaching the introductory levels of FL, as depicted by Item 13, increased until age 50 (See Figure 2).

Figure 2. Efficacy of teaching introductory and advanced levels by FL teachers’ age.



Then, a decrease was noted by a surge of perceived efficacy once FL educators enter the 60- to 70-year-old range. When asked about teaching FL at more advanced levels, the sample was found to feel “quite a bit” of perceived efficacy at during the 20- to 30-year-old stage. However, the next 10 years were found to be lower until the teacher reaches 40 years of age. After that period, efficacy continues to increase reaching a peak. These findings should be viewed with caution since this was not a longitudinal study of FL teachers’ sense of efficacy and these findings investigated the sample’s sense of efficacy at this point in their career.

The intersection between interests and efficacy

Finally, the two data sets were combined for analysis. The SDS data for the six domains were correlated with the modified OSTES first. Table 2 shows the correlation matrix for the six domains of the SDS and the modified OSTES data and its three subscales.

Table 2. Correlations among the SDS and modified OSTES (n=64)

	R	I	A	S	E	C	Modified OSTES	SE	IS	CM
R										
I	.32*	—								
A	.00	.15	—							
S	-.24	.26*	.35*	—						
E	-.07	.18	.45*	.63**	—					
C	.07	.28*	.13	.40**	.44**	—				
Modified OSTES	-.03	.04	.41**	.56**	.43**	.21	—			
SE	-.04	.00	.13	.39**	.13	.04	.71**	—		
IS	-.05	.07	.45**	.48**	.56**	.21	.82**	.31*	—	
CM	.04	.02	.35**	.43**	.29*	.22	.81**	.54**	.54**	—

* p < .05

**p < .01

Correlation coefficients range from -1.00 (an inverse relationship) and +1.00 (a direct relationship).

Analysis showed that only the Social (S), Artistic (A), and Enterprising (E) domains, the interest profile found for the entire sample, had statistically significant positive correlations with modified OSTES. The remaining three domains, Realistic (R), Investigative (I), and Conventional (C) were not correlated at all. Further, when examining the three subscales of the modified OSTES, statistically significant correlations were found among Instructional Strategy and Classroom Management and the S-A-E domains. The Student Engagement subscale, the one with the lowest reported sense of efficacy, was significant only for the Social domain. To this end, the measures of statistical significance indicated that these findings did not occur merely by chance and that the correlations are an indication of a genuine relationship.

Discussion/Conclusions

As highlighted earlier, there is a teacher shortage and it is being affected by at least five different factors: retirement, attrition, increased enrollments, legislation, and perceptions of teaching. Two additional factors for the crisis have been advanced: the matching of vocational interests to the workplace environment and teacher efficacy. Thus, the research questions focused on interests and self-perceived efficacy of inservice FL teachers, unlike earlier studies that investigated vocational interests and perceived efficacy of college students that were not currently employed in their chosen professions. Data analysis of the two instruments used in the present study showed some findings that were congruent with the theory (Holland, 1997). Data analysis revealed high reliability coefficients for the two instruments and subsequent correlational analyses indicated satisfactory evidence of construct validity.

The first finding from this study confirms Holland's (1966) findings that the interest profile for FL educators is Social-Artistic-Enterprising (Swanson, 2008).

“...those who increasingly expressed more interest and more competence, and who rated their skills higher in the Social, Artistic, and Enterprising activities also expressed feeling more efficacious teaching.”

Juxtaposed against theory, these profile domains are adjacent to one another on the hexagonal model and the correlational coefficients among the six domains shows that the adjacent domains were more highly correlated than the correlations for opposite domains. In general, the results suggest that this sample's profile, Social-Artistic-Enterprising, is a stable and consistent vocational profile. Interestingly, the Holland study and the present investigation contained a large number of females interested in becoming FL teachers and both samples' personality profile was the same. Furthermore, the profile for the present study group was highly differentiated, adding confidence that the profile is stable since it helps to confirm the theory of the Holland Hexagon.

The second finding indicates a strong sense of efficacy for the sample. Participants reported feeling most efficacious for instructional strategy followed

by classroom management and finally student engagement. Additionally, factor analysis of this research data confirmed Tschannen-Moran and Woolfolk-Hoy's (2001) findings establishing three dimensions of teacher efficacy.

The third finding, correlational analyses of the SDS and the modified version of the OSTES, resulted in strong correlational coefficients (0.71 - 0.82) for only the S-A-E domains and the teacher efficacy survey. Clearly, as demonstrated by the number and frequency of mandated educational improvement legislation over the years, this combined finding has serious implications for the profession. Standing alone, the S-A-E profile identifies individuals with interests that are harmonious with teaching FLs. However, as of yet, the profile does not address the notion of perceived confidence in one's ability to bring about desired outcomes of student engagement and learning. Thus, the correlations between the vocational profile and the teachers' sense of efficacy indicate that the S-A-E profile resembles not only a FL educator, it now speaks to the perceived efficacy of teaching FLs, truly an important aspect of teaching as highlighted earlier.

The results demonstrated that those who increasingly expressed more interest and more competence, and who rated their skills higher in the Social, Artistic, and Enterprising activities also expressed feeling more efficacious teaching. Conversely, those who expressed less interest and less competence, and who self-rated their skills lower in the Social, Artistic, and Enterprising activities were found to feel less efficacious teaching. Clearly, this is an important discovery because this strategy of identifying highly efficacious FL teachers has implications for recruitment and retention, especially during a time of critical shortage.

Since the SDS is recommended for use with adolescents and adults alike, perhaps collegiate faculty could work collaboratively with secondary FL teachers' upper-level students (grades 11-12) and administer the SDS to these students to help identify

future FL educators. Once recognized, these students could then be invited to participate in special activities that promote quality FL education. Specifically, collegiate faculty could invite these students and their teachers to campus to attend preservice induction conferences, visit education and FL classes, meet with preservice FL educators and faculty as well as admissions personnel. For those first-generation students whose parents did not attend institutions of higher education, this could be a significant first step to recruitment.

Much like the research cited earlier by Spencer (2003), organizers of state, regional, and national FL meetings could design sessions for interested preservice FL educators. Students would have opportunities to meet other students interested in becoming FL teachers and learn more about the profession from experts in the field. Through early integration of prospective FL educators, student interests could be matched more effectively to the workplace environment (Holland, 1997). Working closely with Holland's theory, perhaps the congruence between the workplace environment and one's interests need to be matched to improve efficacy, and reduce possible attrition, therefore retaining more FL teachers, especially during a shortage of FL educators.

Furthermore, the strong correlations between the S-A-E profile and the teachers' sense of efficacy have implications for preservice teacher self-awareness. The data indicate that these employed FL educators with the S-A-E career code felt the most efficacious, especially in terms of instructional strategies and classroom management. Research shows that teachers with a higher sense of efficacy exhibit greater enthusiasm for teaching (Hall, Burley, VILLEME, & Brockmeier, 1992), have greater commitment to teaching (Coladarci, 1992), and are more likely to remain in teaching (Burley, Hall, VILLEME, & Brockmeier, 1991).

Inasmuch as these teachers reported having a high sense of efficacy and belong to the S-A-E classification, the colleges of education could implement using the SDS as a tool for preservice teachers to examine vocational choice. Perhaps by early recognition of vocational interests as depicted by the SDS, individuals could benefit from a more in-depth evaluation of career options where congruence between workplace environments and one's personality could be strengthened. In turn, perhaps lower rates of FL teacher attrition could be achieved to help offset the current shortage.

Additionally, there are implications for teacher retention. During content specific professional development meetings, inservice FL educators could be exposed to new pedagogical strategies utilizing themes from the Artistic and Enterprising domains of Holland's SDS. Thus, these teachers could develop and nurture a broader range of interests that include those that are more congruent with the workplace environment. In turn, this specialized forum for teacher development may help retain more of these much-needed individuals.

“...individuals could benefit from a more in-depth evaluation of career options where congruence between workplace environments and one's personality could be strengthened.”

Finally, even though this study investigated only FL educators, the study has implications for recruiting and retaining efficacious teachers regardless of content area specialty. Research indicates that the teacher shortage is not content specific. Other shortage areas such as math, science, and special education (AAEE, 2006) could benefit from similar approaches.

Given the wide range of implications from the present research, this study is not without its limitations. Findings from this study should be interpreted with caution due to the small sample size. Even though a large proportion of Wyoming's FL educators participated in this study, further research including a larger sample size and a more diverse population might allow for broader generalizations. Additionally, all the data were self-reported measurements. Further, even though the data remained anonymous among the participants, it was not gathered namelessly. Last, while I advocate measuring efficacy and vocational interests using these surveys, other research instruments could be utilized. Notwithstanding the limitations of this research, reasons for the teacher shortage abound and the shortage continues to persist even after researchers and organizations issued warnings almost three decades ago. Instead of hoping that prospective efficacious educators will enter in the teaching profession, I call for more research not only to arrest the decline of inservice teachers but also to develop more innovative teacher recruitment and retention strategies as a means to increase the number of efficacious educators.

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Notes

1. To be considered highly qualified, teachers must have: (1) a bachelor's degree, (2) full state certification or licensure, and (3) prove that they know each subject they teach (US Department of Education, 2004).
2. Reliability indicates the consistency of measurement and the coefficient range is from 0.0 (low) to 1.0 (high).
3. Standard deviation is a measure of central tendency that shows the spread of a dataset around the mean of the data.

References

- American Association for Employment in Education. (2003). *Educator supply and demand in the United States: 2002 report*. Evanston, IL: AAEE.
- American Association for Employment in Education. (2006). *Educator supply and demand in the United States: 2006 report*. Evanston, IL: AAEE.
- Armor, D., Conroy-Oseguera, P., Cox, M., King, N., McDonnell, L., Pascal, A., Pauly, E., & Zellman, G. (1976). *Analysis of the school preferred reading programs in selected Los Angeles minority schools*. (REPORT No. R-2007-LAUSD). Santa Monica, CA: Rand Corporation. (ERIC Document Reproduction Service No. I30243)
- Ashton, P.T. & Webb, R.B. (1986). *Making a difference: Teachers' sense of efficacy and student achievement*. New York: Longman.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

- Benninger, W.B., & Walsh, W.B. (1980). Holland's theory and non-college-degreed working men and women. *Journal of Vocational Behavior, 17*, 81-88.
- Betz, N. E., Harmon, L.W., & Borgen, F.H. (1996). The relationship of self-efficacy for the Holland themes to gender, occupational group membership, and vocational interests. *Journal of Counseling Psychology, 43*, 90-98.
- Boe, E. (1990). Demand, supply and shortage of bilingual and ESL teachers: Models, data and policy issues. *Proceedings of the First Research Symposium on Limited English Proficient Student Issues*. Retrieved January 26, 2008, from: <http://www.ncela.gwu.edu/pubs/symposia/first/demand.htm>
- Boe, E., & Gilford, D. (1992). *Teacher supply, demand, and quality*. Washington, DC: National Academy Press.
- Boles, K. (2000). Why new teachers quit. *Teacher Magazine, 11*(7), 59.
- Boser, U. (2000, January 13). A picture of the teacher pipeline: Baccalaureate and beyond. *Education Week: Quality Counts 2000, 19*(18), 16-17.
- Bradley, A. (1999, March 10). States' uneven teacher supply complicates staffing schools. *Education Week, 18*(26), 1, 10-11.
- Brouwers, A., & Tomic, W. (2000). A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. *Teaching and Teacher Education, 16*, 239-253.
- Brunetti, G. (2001). Why do they teach? A study of job satisfaction among long-term high school teachers. *Teacher Education Quarterly, 28*(3), 49-74.
- Burley, W.W., Hall, B.W., Villeme, M.G., & Brockmeier, L.L. (1991). A path analysis of the mediating role of efficacy in first-year teachers' experiences, reactions, and plans. *Paper presented at the annual meeting of the American Educational Research Association, Chicago*.
- Coladarci, T. (1992). Teachers' sense of efficacy and commitment to teaching. *Journal of Experimental Education, 60*, 323-337.
- Darling-Hammond, L. (1984). *Beyond the commission reports: The coming crisis in teaching*. Santa Monica, CA: Rand Corporation.
- Darling-Hammond, L., Berry B., & Thoreson, A. (2001). Does Teacher Certification Matter? Evaluating the Evidence. *Educational Evaluation and Policy Analysis, 23*(1), 57-77.
- Draper, J. (1991). *Foreign language enrollments in public secondary schools, Fall 1989 & 1990*. Yonkers, NY: American Council on the Teaching of Foreign Language. (ERIC Document Reproduction Service No. ED 340214)
- Draper, J., & Hicks, J. (2002). *Foreign language enrollments in public secondary schools: Fall 2000*. Retrieved January 28, 2008, from: <http://actfl.org/files/public/Enroll2000.pdf>
- Farber, B.A. (1991). *Crisis in education: Stress and burnout in the American teacher*. San Francisco, CA: Jossey-Bass.
- Fideler, E., & Haselkorn, D. (1999). *Learning the ropes: Urban teacher induction programs and practices in the United States*. A national survey conducted by Recruiting New Teachers. Belmont, MA: Recruiting New Teachers.
- Georgia Professional Standards Commission. (2006). *Status Report: The Georgia Educator Workforce 2006 Executive Summary*. Retrieved November 16, 2007, from: http://www.gapsc.net/Workforce/2006_Report/Executive_Summary.pdf
- Gibson, S., & Dembo, M. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*, 569-582.
- Glickman, C.D., & Tamashiro, R.T. (1982). A comparison of first-year, fifth-year, and former teachers on efficacy, ego development, and problem solving. *Psychology in the Schools, 19*, 558-562.
- Gorsuch, R.L. (1983). *Factor analysis (2nd ed.)*. Hillsdale, NJ: Erlbaum.

- Gottfredson, G.D., & Holland, J.L. (1996). *Dictionary of Holland Occupational Codes (3rd Ed.)*. Lutz, FL: Psychological Assessment Resources, Inc.
- Guskey, T.R. (1988). Teacher efficacy, self-concept, and attitudes toward the implementation of instructional motivation. *Teaching and Teacher Education*, 4, 63-69.
- Haggstrom, G., Darling-Hammond, L., & Grissmer, D. (1988). *Assessing teacher supply and demand*. Santa Monica, CA: Rand Corporation.
- Hall, B.W., Burley, W.W., Villeme, M.G., & Brockmeier, L.L. (1992). An attempt to explicate teacher efficacy beliefs among first year teachers. *Paper presented at the annual meeting of the American Educational Research Association*, San Francisco.
- Holland, J.L. (1966). A psychological classification scheme for vocations and major fields. *Journal of Counseling Psychology*, 13(3), 278-288.
- Holland, J.L. (1994a). *Self-Directed Search Form R 4th Edition, Assessment Booklet: A guide to educational and career planning*. Lutz, FL: Psychological Assessment Resources, Inc.
- Holland, J.L. (1994b). *Self-Directed Search Form R 4th Edition, The Occupations Finder*. Lutz, FL: Psychological Assessment Resources, Inc.
- Holland, J.L. (1997). *Making Vocational Choices: The theory of vocational personalities and work environments (3rd Ed)*. Lutz, FL: Psychological Assessment Resources, Inc.
- Holland, J.L., Fritzsche, B.A., & Powell, A.B. (1994a). *The Self-Directed Search Technical Manual*. Odessa, FL: Psychological Assessment Resources.
- Holland, J.L., Powell, A.B., & Fritzsche, B.A. (1994b). *The Self-Directed Search Professional Users Guide*. Odessa, FL: Psychological Assessment Resources.
- Ingersoll, R. (2003). *Is there really a teacher shortage?* Center for the Study of Teaching and Policy. Seattle: University of Washington.
- Johnson, S., Birkeland, S., Kardos, S., Kauffman, D., Liu, E., & Peske, H. (2001, July/August). *Retaining the next generation of teachers: The importance of school-based support*. Harvard Education Letter; Research Online. Retrieved November 16, 2007, from: <http://www.edletter.org/past/issues/2001-ja/support.shtml>
- Konanc, M.E. (1996). *Teacher attrition 1980-1996. Statistical Notes Number 002. North Carolina Department of Public Instruction*. (ERIC Document Reproduction Service No. ED 400240)
- Lapan, R.T., Boggs, K.R., Morrill, W.H. (1998). Self-efficacy as a mediator of investigative and realistic general occupational themes on the Strong Interest Inventory. *Journal of Counseling Psychology*, 36, 176-182.
- Latham, A., Gitomer, D., & Ziomek, R. (1999). What the tests tell us about new teachers, *Educational Leadership*, 56(8), 23-26.
- Lauer, P. (2001). *A secondary analysis of a review of teacher preparation research*. Denver: Education Commission of the States.
- Lenox, R., & Subich, L. (1994). The relationship between self-efficacy beliefs and inventoried vocational interests. *Career Development Quarterly*, 42, 302-313.
- Long, S. S. (2004). "Visions" of K-12 foreign language teacher recruitment in higher education. Retrieved from October 29, 2007, from: <http://www.actfl.org/files/public/Visions-SpainLongArticle.pdf>
- Midgley, C., Feldlaufer, H., & Eccles, J.S. (1989). Change in teacher efficacy and student self- and task-related beliefs in mathematics during the transition to junior high school. *Journal of Educational Psychology*, 81(2), 247-258.
- Murphy, P., DeArmand, M., & Guin, K. (July 31, 2003). A national crisis or localized problems? Getting prospective on the scope and scale of the teacher shortage. *Education Policy Analysis Archives*, 11(23). Retrieved November 12, 2007, from: <http://epaa.asu.edu/epaa/v11n23>

- National Academy of Sciences. (1987). *Toward understanding teacher supply and demand*. Washington, DC: National Academy Press.
- National Center for Education Statistics. (2002). *Schools and staffing survey, 1999-2002*. Washington, DC: US Department of Education. Office of Educational Research and Improvement, NCES.
- National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: National Academy Press.
- National Commission on Teaching and America's Future. (2002). *Unraveling the "Teacher Shortage" problem: Teacher Retention is the Key*. Washington, DC: Author.
- Nielson, D. (2001). *Who will teach Montana's children?* Helena, MT: Certification Standards and Practices Advisory Council.
- Pajares, F.M. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, 66, 543-578.
- Rosenbusch, M.H. (2005). The No Child Left Behind Act and teaching and learning languages in the U.S. Schools. *Modern Language Journal*, 89, 250-261.
- Rosenbusch, M.H., & Jensen, J. (2004). Status of foreign language programs in NECTFL states. *NECTFL Review*, 56, 26-37.
- Scheetz, L. (1995). *Recruiting trends, 1995-6. Education supplement. A study of 294 elementary and secondary school systems employing new teacher education graduates*. East Lansing, Michigan State University, Collegiate Employment Research Institute.
- School Improvement Act. Vol. 5 §V.S. 21-9-101(g) (1999).
- Spencer, S. (2003). From Crisis to opportunity: French and FL studies in the 20th century. *ADFL Bulletin*, 34(2), 47-50.
- Stowers, L. (2004). *PTSB report on non-certified teachers in Wyoming classrooms*. Cheyenne, WY: Professional Teacher Standards Board.
- Stanford, B. (2001). Reflections of resilient urban teachers. *Teacher Education Quarterly*, 28(3), 75-87.
- Swanson, P. (2008). The RIASEC profile of foreign language teachers. *Journal of Vocational Behavior*, 72, 25-30.
- Swanson, P., & Moore, A.D. (2006). Hoping people become FL educators offers little: A quasi-experimental approach to FL teacher recruitment. *Northeast Council on the Teaching of Foreign Languages Review*, 58, 1-34.
- Tschannen-Moran, M., Woolfolk-Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68, 202-248.
- Tschannen-Moran, M., & Woolfolk-Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.
- U.S. Department of Education. (2004). *New No Child Left Behind Flexibility: Highly Qualified Teachers*. Retrieved February 17, 2008, from <http://www.ed.gov/nclb/methods/teachers/hqtflexibility.html>
- Weld, J. (1998). Attracting and retaining high-quality professionals in science education. *Phi Delta Kappan*, 79, 536-539.
- WELL Newsletter for Wellness. (2000). *The Importance of Teaching*. 2(3), 1-4. Retrieved November 16, 2007, from: http://www.speakwell.com/well/2000_fall/articles/the_importance_of_teaching.html
- Wilson, S., Darling-Hammond, L., & Berry, B. (2001). *A case of successful teaching policy: Connecticut's long-term efforts to improve teaching and learning*. Seattle, Washington: University of Washington, Center for the Study of Teaching and Policy.

Zoroya, G., & Hartzell, K. (1999, August 30). The teacher shortage: It just doesn't add up. *USA Today*, p. 1D.

Appendix A

Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.

	Nothing		Very little	Some influence		Quite a bit	A great deal	
1. How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8 9
2. How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8 9
3. How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8 9
4. How much can you do to help your students value learning?	1	2	3	4	5	6	7	8 9
5. To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8 9
6. How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8 9
7. How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8 9
8. How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8 9
9. How much can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8 9
10. To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8 9
11. How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8 9
12. How well can you implement alternative strategies in your classroom?	1	2	3	4	5	6	7	8 9
13. How much can you help your students learn at the first year level of the language(s) you teach?	1	2	3	4	5	6	7	8 9
14. How much can you help your students learn at highest levels of the language(s) you teach?	1	2	3	4	5	6	7	8 9