

# A Program for Linguistically Talented Youth<sup>1,2</sup>

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In light of recent international and national events, it is clear that the United States' capability in the area of understanding language and culture is critical to maintaining awareness of international and cultural trends that may threaten our nation's security. The new global economy, moreover, requires US citizens who are active learners and speakers of second and third languages. The need for talented and highly trained linguists, translators, interpreters, and intelligence personnel is greater now than ever. Therefore, we propose to create a "pipeline" for the encouragement of linguistic talent, beginning in local elementary schools and culminating in a talent pool of bilingual and trilingual young adults who are likely to become candidates for positions in the military, government, business, and education.

## 1. National security and the need for linguistic talent

Perhaps at no other time in U.S. history has the need for citizens talented in the capacity to learn languages rapidly and possessed of a sophisticated understanding of international cultures been so great. At the Senate Subcommittee on International Security, Proliferation, and Federal Services, Governmental Affairs Committee, September 14, 2000, Ellen Laipson of the National Intelligence Council said:

"One cannot overstate the centrality of foreign language skills to the core mission of the intelligence community. Foreign languages come into play at virtually all points of the intelligence cycle, from collection to exploitation, to analysis and production. The collection of intelligence depends heavily on language, whether the information is gathered from a human source through a relationship with a field officer or gathered from a technical system."

Not only must information in foreign languages be processed, it must be explained in clear and unambiguous terms. Much intelligence is derived from the Internet, which is now increasingly in languages other than English. Too often, the intelligence community lacks the foreign language skills necessary in international crises, and cannot provide thorough enough analysis in a timely way for policy decisions.

In addition, Laipson said, "Thousands of technical papers that provide details on foreign research and development in scientific or technical areas currently go untranslated, because we lack the funds and personnel to interpret the material." (p.88).

The House Permanent Select Committee on Intelligence has stated that of all the needs for increased intelligence capacity, the most pressing such need is for greater numbers of foreign language-capable intelligence personnel, with increased fluency in specific and multiple languages. Senator Paul Simon (2001) put the matter succinctly when he stated, "In every national crisis from the Cold War through Vietnam, Desert Storm, Bosnia, and Kosovo, our nation has lamented its foreign language shortfalls. But then the crisis "goes away," and we return to business as usual. One of the messages of Sept. 11 is that business as usual is no longer an acceptable option."

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<sup>1</sup> The title of this paper was originally "X-treme Literacy". This paper, however, does not focus as much on literacy now as it does on fostering multilingualism.

<sup>2</sup> This is a modification of a proposal currently under consideration for Congressional funding.

While the military at present requires nearly 12,000 language specialists, there will likely to be a need for many more. Furthermore, young people with excellent language skills are increasingly in demand by international businesses and by institutions of higher education, where the retirement rate of foreign language professors now threatens the teacher training resources available. There is at present no national language strategy, although there have been strong calls for one, particularly from the National Foreign Language Center, which is the only national think tank devoted to foreign language policy issues (Nordin, 2001). Additionally, there is no clear academic or career path for young people who wish to pursue careers in foreign languages or linguistics. All along the way, from elementary to post-graduate training, students drop out of the talent pool in alarming numbers.

In most developed countries, foreign language instruction starts in elementary school. According to a report by the Center for Applied Linguistics in 1997, however, only 31% of all elementary schools in the United States offered foreign language learning opportunities. Of elementary schools offering foreign language instruction, 79% offered Spanish, 27% offered French, 5% offered German, 3% offered Japanese, 2% offered Hebrew or Italian, and 1% or less offered one of 13 other languages.

The same report showed that 86% of secondary schools offer foreign language instruction; among those schools, 93 % offered Spanish, 64% offered French, 24% offered German, 7% offered Japanese, 3% offered Italian, 3% offered Russian, and less than 1% offered one of 14 other languages (Rhodes & Branaman, 1999). The latest data (from 1994) on foreign language enrollments in elementary and secondary schools show that 6 million students in grades 7 through 12 were taking a foreign language; of these, 3.9 million (64%) were enrolled in Spanish classes, 1.36 million (22%) in French, 373,000 in (6%) in German, 57,000 (0.9%) in Italian, 18,000 (0.3%) in Russian, 9,500 (0.16%) in Chinese, 2,600 (0.04%) in Arabic, among others (Draper & Hicks, 1994).

Most of these students do not go on to major or minor in foreign languages. Less than one percent of all college students study critical languages, according to a recent survey by the Modern Language Association, and the number of students taking any foreign language has remained at eight percent for more than 25 years (Brod & Wells, 2000). The recent figures for students entering college show that there is little interest in these college majors. Among the 1.2 million students taking the ACT in 2001, less than 3,500 expressed interest in majoring in foreign languages, and only 15 (!) have interest in majoring in Middle Eastern languages (ACT, 2002).

## **2. Second language acquisition**

There is an interesting dichotomy that currently exists in the United States concerning second language education and acquisition. While the government and military largely agree that there is a great need for bilingual speakers, many state educational policies have essentially banned instruction in home languages other than English. This leaves English Language Learners (ELLs), who are in an ideal position to become bilingual, stuck with using only one language, English, in school and also impedes the development of biliteracy. ELL students who are interested in learning their home language in an academic setting are frequently encouraged to wait until they can take it as a foreign language, in as late as eighth or ninth grade.

So, why do so few American students persist in the study of languages other than English? There are several possible explanations. First, there are indications of a negative relationship between age and ability to learn second languages, and most Americans do not have the opportunity to study a language other than English until late adolescence. Until recently, the most widely accepted point of view on second language acquisition was the “critical period hypothesis.” Developmental psychologists held that puberty marked the point at which changes in cognitive structures made second language acquisition more difficult; learning theorists speculated that past language learning interfered with current language learning; and evolutionary biologists claimed that there was no need for language learning ability past the age of reproduction. All of these factors may be related to the diminished capacity for language learning that comes with age.

More recently, however, the critical period hypothesis has met with criticism from researchers who say that data do not support the idea that language learning ability abruptly stops at puberty; but

rather that language learning ability seems to diminish in a continuous linear path throughout the lifetime (Birdsong, 1999). To explain this decline, scholars have presented simpler explanations based in the interaction between motivation and language learning ability. Most second language learners in the United States are children whose first language was not English. These children, who spend most of their day with English speakers, whose parents often insist on English in the home, who need English to understand their other subjects, have a vital need to learn a second language. Despite the political opposition to bilingual education and a few highly publicized studies in opposition to it, there is a preponderance of evidence which strongly suggests that children who are provided carefully planned transitional and dual language programs benefit from this support (Garcia & Flores, 1986; Meyer & Fienberg, 1992).

Adolescent and adult English speakers seldom have this kind of academic expertise in dual language learning. Native English speakers who are learning a second language early on in school are also benefiting from being in dual language programs. There is evidence that children who are learning to read, and improving their reading skills at the same time as they are learning a foreign language, profit from the interplay between literacy and language learning. Children also have more time and more curiosity than adolescents or adults to explore a language and to enjoy the learning process. (Gardner, 2001).

There are other simple explanations for declining language acquisition related to motivation. The 70% of elementary children who have no instruction in languages other than English develop other interests and competencies and lose interest in this field of study. Secondary school students and college students often possess merely an instrumental motivation to learn a second or third language; they take languages only to fulfill a requirement. This is simply not enough motivation to achieve mastery of another language.

Therefore, while there are many conflicting arguments about the nature of the decline of language learning ability with age, no one disputes the fact that for successful, native-like capacity in a second language, the earlier the learning, the better (Eddy, 1998), especially in terms of phonology. Those students who are deprived of the opportunity to learn a second language (other than English) early in life will seldom achieve the proficiency required to speak like a native speaker.

Second, there is little continuity of instruction and guidance for second language learners from elementary to secondary to higher education, in short, no “pipeline” for linguistic talent. Methods differ from school to school, from grade level to grade level, and from classroom to classroom. The availability of languages, especially those other than Spanish and French, also vary widely depending upon a school’s instructional staff.

Three basic models of early language instruction exist. Foreign language in the elementary School (FLES) teaches mainly listening and speaking, some reading and writing, as well as the culture of the target language, in a meaningful context and in an articulated sequence, with outcome being some communication competence. Second is the Foreign Language Exploratory (FLEX) model. Instruction takes place over a fixed period of time, from six to nine weeks over a single semester. The goal is for students to learn about language, rather than to learn the language. There is a brief exploration of the culture, and instruction in a few target phrases. In this model, students are not expected to reach communication competence. Immersion programs literally immerse the learner in the foreign language, either for the entire day or a portion thereof. Immersion programs provide extended learning opportunities while learning subject content. In fact, students may take all or most of their coursework in that language. (Heining-Boynton, 1998).

Each model delivers different results. FLES programs teach the language in cultural context, but are often cut back by schools to such short periods that language competence is difficult to achieve. FLEX provides admirable cultural understanding, but no real communication capacity. Of all of the models, only immersion guarantees the possible outcome of communication competence. “Foreign language immersion, particularly early total immersion programs, provide the most natural, effective, efficient, and economic alternative for acquiring a second language” (Rubio, 1998, p. 19). For non-native speakers, even those with transitional bilingual programming, that is what in fact occurs. Very few schools, however, provide foreign language immersion for English speakers. When such programs

are available, they often do not continue into middle school and lack continuity with middle and secondary education.

Even more striking is the virtual absence of continuity in career guidance. Elementary students have little exposure to people who are successful in language-oriented careers. Secondary students receive little encouragement to pursue these careers from guidance counselors who may know little about foreign language careers and who are seldom bilingual themselves. Because there are no clear career ladders, college students do not see how a major in a foreign language can be translated into a lucrative or satisfying career. Gender issues also emerge in career guidance. Because the majority of students who are interested and motivated in foreign languages are female, many continue to shy away from the more lucrative language-oriented careers, which are in the military and international business (Kerr, 1997; Kerr and Kurpius, 1998), as these are still considered nontraditional careers for women. Extraordinary efforts have been made to encourage the development of mathematical and scientific talent in young people, but nothing analogous to this effort has been made to facilitate the development of linguistic talent among our nation's youth.

As a result of discontinuous home/foreign language education and guidance, many young people are lost to the nation's linguistic talent pool. Models exist for creating "pipelines," or continuous encouragement of talent from pre-school to profession; unfortunately, however, these models are all in the domain of math and science. The National Science Foundation, the Eisenhower Foundation, and many other organizations interested in the nation's technological capabilities have devoted resources to identifying and supporting the talent development of young people with mathematical and scientific ability. The result has been the creation of an impressive "pipeline" for talent that has increased the numbers of young people, particularly women and minorities, who are choosing careers in science, math, engineering, and technology (NSF, 2001.) A similar "pipeline," however, does not exist in the area of foreign languages; and without a similar national effort, it is unlikely that young people can be retained in the talent pool.

Third, language aptitude, perhaps the most important factor in the capacity for second language learning, has been virtually ignored by educators. While nearly all people have the ability to learn a foreign language, it is certain that this ability is distributed, like all other human abilities, along a normal curve, with a small number of people learning slowly and with great difficulty and a small number having quite extraordinary facility. Children who are linguistically talented are not identified as such in the schools. There is strong opposition among Americans to special programs for the education of gifted learners. The educational establishment continues to view gifted education as elitist, despite the fact that for the last twenty years, a major emphasis in gifted education has been the identification and education of disadvantaged and minority gifted youth (Kerr & Cohn, 2001). In school districts that cannot shake this outdated view of gifted education, many verbally gifted young people may never know that they have special abilities. In addition, among the young people who have learned English as a second language, there are talented children who have learned extremely rapidly and proficiently. These linguistically gifted children are not only unidentified as potential linguistic talent; they are often encouraged to forget their home language, and are seen as deficient until they do! This blindness to proven ability prevents our nation from tapping this talent pool and discourages bilingual children from becoming multilingual.

### **3. A model for successful second language learning**

What individual characteristics are necessary to achieve near native proficiency in a second language? Two major factors are acknowledged by researchers of language acquisition: language aptitude, or linguistic intelligence, and motivation (Gardner, 2001).

#### *3.1 Linguistic intelligence*

Linguistic intelligence is highly correlated with general intelligence. At the highest levels of performance, however, people are often quite specific in ability. Howard Gardner's (1983) theory of

multiple intelligences, which opened the way for the study of linguistic intelligence, showed that linguistic intelligence can exist relatively independently of other intelligences, although of course, for proficiency in a foreign language, other abilities, such as logical intelligence and interpersonal intelligence are also required. The profiles of students who attain perfect scores on the English section of the ACT support the idea that it is possible for a person of high linguistic intelligence to be only average in other abilities (Colangelo & Kerr, 1990). According to Ellis (1992) linguistic aptitude includes:

1. Phonemic coding ability, or the capacity to identify the sounds of a foreign language so that they can be remembered and associated with symbols;
2. Grammatical sensitivity, the capacity to recognize the grammatical functions of words in sentences;
3. Inductive language learning ability, the ability to identify patterns of correspondence and relationships between form and meaning; and,
4. Verbal memory, the capacity to memorize vocabulary accurately and rapidly.

Most of what is known about linguistic intelligence in young people is based on the studies of verbally precocious youth enrolled in Talent Search programs across the United States (Olszewski-Kubilius & Whalen, 2001). For the past 23 years, gifted middle-school students throughout the United States have participated in talent search programs. In the early 1980s several universities coordinated resources to identify, help educate, counsel, and study verbally precocious and mathematically precocious youth. These were The Johns Hopkins University (Baltimore, MD), Duke University (Durham, NC), Northwestern University (Evanston, IL), and the University of Denver, (Denver, CO). Among these four talent searches, students throughout the entire United States have access to a wide selection of talent identification services, publications, and educational programs. Talent search programs at major land-grant universities, like Arizona State University, Iowa State University, the University of Iowa, California State University, Sacramento, and the University of Washington (Seattle, WA) extended the research of these original programs and provided innovative programming for talented youth. Over a million students have taken part in at least one of the talent search programs over the past twenty years.

Julian Stanley of The Johns Hopkins University pioneered the concept of out-of-level testing, which is now used by the talent searches to find middle-school students who score exceptionally well on nationally-normed, age-appropriate standardized tests and then to offer them opportunities to take either the American College Testing Program's ACT or the Scholastic Assessment Test (SAT-I). Although these tests were designed for junior and senior high school students planning to enter college, there is now a body of research that shows that these tests effectively predict the ability of middle school children to learn college level material (Stanley, 2002). Out-of-level testing has been well established as the method of choice for identifying students who learn quickly and well in both verbal and mathematical domains (Cohn, 1988; Cohn & Cohn, 1986).

What is known about the young people who are characterized as verbally precocious? It is clear that these young people do indeed have extraordinary verbal ability. About one-third of the students in talent search programs score as well or better than the average college-bound senior, and they do this when they have not yet completed the seventh grade. That they are capable of advanced work in the linguistic domain has been documented by numerous studies of the achievements of talent search students. Their vocabulary and knowledge of written English surpasses that of many college students. They have better memory for words, more compact word representations in memory, and exceptional speed of encoding (Olszewski-Kubilius & Whalen, 2001). They are often early readers, and continue to read well. They are capable of high achievement in powerful language arts. Although there have been few studies of verbally precocious students in foreign language classes, these studies point to exceptional linguistic ability. McClain & Durden (1980) found that middle school students participating in accelerated German classes learned the complete grammar of an introductory course in

two thirds the time that it took for college students to learn the same material. Thompson & Thompson (1996) found similar success with Latin classes.

As was mentioned earlier, there is an entire category of linguistically gifted youth, bilingual children who were rapid and efficient learners of English, about which we know very little. These students are often overlooked by talent search programs, because despite their strong bilingual performance, they may not be identified by tests of verbal ability that were normed on native English speakers. Therefore, it is critical that these children be brought into the same talent pool now mainly populated by those children who have had access to out-of-level testing.

### *3.2 Educating linguistic intelligence*

Middle school students who participate in talent search projects have a broad array of educational programs available to them. Unfortunately, very few of these programs feature courses in languages other than English. Most summer programs offer accelerated instruction of college level material in small classes. Acceleration within a talent domain provides the opportunity for students to progress in those areas in which they are most likely to excel (VanTassel-Baska, 1998). The method of instruction in most talent search programs is based on the Diagnostic Testing → Prescriptive Instruction (DT→PI) Model. .

Learning that employs the strategies described in the DT→PI model begins with a thorough diagnostic assessment of what the learner brings into the learning environment when he or she first arrives. Measures employed to assess the performance level of verbally gifted learners must contain many test items and tasks that represent levels considerably beyond the student's chronological age. Out-of-level test administration is necessary because these individuals tend to answer every question on age-appropriate tests correctly, and in order to map their frontiers of knowledge in a subject, they must make a substantial number of errors.

Once the arriving student's subject knowledge is described in detail, a learning plan can be developed that optimizes both efficiency and effectiveness. But this step represents only the beginning. The DT→PI model requires frequent assessment to facilitate continuous progress and early identification of difficulties with certain topics (Stanley, 1977, 1978, 1979, 2002).

The amount of work required to conduct a program of continuous progress moderated by frequent diagnostic testing could easily overwhelm a classroom teacher. It is only with the arrival of computing capability (both hardware and software) that learning materials could be developed to allow the full-scale implementation of the DT→PI model. With mediated instruction, it is possible to optimize second and third (etc.) language learning (speaking and listening, reading with comprehension, and writing) among linguistically gifted learners in ways that were until recently simply impossible. Virtually the entire second language learning literature argues strongly for curricular materials that employ a variety of learning strategies (auditory, visual, and activity-based) along with frequent assessment (psychometric as well as performance-based) to allow the learner to be paced individually and review when necessary (Met, 1998; Curtain & Pesola, 1994). The application of stand-and-deliver techniques with support from technology-based learning materials is well supported by the learning literature.

Therefore, the ideal model for training linguistic intelligence would begin with a search for heritage speakers who are rapid English learners and English speakers who have high language aptitude; administer diagnostic-prescriptive methods for assessing the current status of the student's knowledge and abilities and prescribing a program of education; accelerate the presentation of the information to match the student's capacity to learn it; and use technology to allow for constant monitoring of learning and mentoring by instructors.

### *3.3 Motivation*

Motivation is the second major factor that predicts success in second language acquisition (Ellis, 1992; Dornyei & Schmidt, 2001). Motivation includes the attitudes and the emotional states that influence the degree to which a learner will put forth effort to learn another language. Instrumental

motivation, mentioned earlier, is the most common reason that most people learn a second language, that is, in order to succeed in college or get a job. Instrumental motivation, however, does not seem to be sufficient to create the kind of competence that leads to native-like proficiency in second-language learning. Integrative motivation is the kind of motivation that influences students who have an interest in the culture and the people represented by the language. Students may develop this motivation through exposure to a culture through travel, friendships, media, or reading. At its most powerful, integrative motivation includes a desire to identify with the culture and to be involved with the people in a deeper way than can be achieved without knowledge of the language. A third source of motivation is resultative motivation. This occurs when students experience success in learning a language and, therefore, become more interested in learning more of the language. Success leads to more success, and language learning becomes pleasurable and rewarding. Finally, there is intrinsic motivation. Students who enjoy the learning tasks and the challenge of the foreign language methods may develop intrinsic motivation. The most potent intrinsic motivation may be what Csikszentmihalyi (1996) labeled “flow,” that mental state which occurs when the talent of the learner is just equal to the level of challenge, creating a sense of timelessness and intense involvement with the work at hand.

### *3.4 Shaping motivation in language learning*

The ideal model for shaping the motivation of foreign language learners would be one that capitalizes on all four kinds of motivation. Guidance workshops can emphasize the instrumental benefits of language acquisition, such as the possibility of wider friendships, greater success in school, opportunities to study abroad, and the availability of excellent job opportunities. Exposure to positive and stimulating aspects of a culture, through storytelling, literature, music, performing arts, foods, and dress may build integrative motivation. Friendships and mentorships with people who speak the language and participate in the culture can be powerful as well. Resultative motivation can be shaped by creating success experiences for students. Instruction that is precisely keyed to their abilities may provide just such experiences. Finally, intrinsic motivation may be derived from observations of peers and respected teachers enjoying and speaking passionately about their love of the foreign language learning experience. Motivation in foreign language learning, particularly the motivation of very gifted learners, remains to be explored more carefully and more extensively by researchers.

It is very likely that the findings of the National Academy of Education can be applied to verbally talented learners. These findings suggest that the design of learning environments be based on three principles (Branford, et al., 2000).

1. The focus of instruction needs to change from the classroom to the individual learner.
2. Assessment that brings to light the thinking of the learner, to the learner himself or herself as well as to the teacher, needs to be an integral part of the learning process. Methods of assessment must include a variety of tools and measures, some traditional psychometric in character and others more performance-based.
3. Learning must be community centered.

## **4. Mission**

The aim of this project is to create a potent series of interventions that combine the best practices in foreign language instruction, education of gifted youth, and motivation for life-long learning of languages and cultures. We intend to bring together experts in all of these fields at annual working symposia to help create and continually perfect our programs; to develop academies for the training of linguistically gifted youth; to create career guidance and retention strategies for keeping their interest in language oriented careers alive; and in a period of five years, to have an enthusiastic, highly trained linguistic talent pool available to serve our nation’s needs.

## 5. Method

This is a five-year model project with the expectation of renewal and expansion if objectives are met. We have chosen five years because that will allow time for the initial group of middle school students to reach the age of crystallization of vocational interests, around year 11 or 12 of high school. A five-year timeline is included in Appendix C. The objectives of this project follow.

1. Establish an annual research symposium on linguistic giftedness and second language learning;
2. Develop research-based model program for linguistically talented youth at all levels of education, including:
  - a. a talent search for verbally gifted youth using extant talent search programs for identification as well as our own strategies for identifying students for whom English is a second language;
  - b. a series of summer courses for linguistically talented youth, including accelerated language instruction in second and third languages; linguistics; rapid reading; research methods; and writing;
  - c. a career development and guidance program educating these students in careers for linguistically talented students as well as ways of training for these careers; and,
  - d. a mentorship and internship program for verbally gifted adolescents and college students providing summer opportunities in language instruction, translation, and other verbal domains;
3. Create a teacher-training program to familiarize teachers with aspects of the development of extreme linguistic ability and methods of facilitating Web-based language learning; and,
4. Create a national institute for linguistic talent development modeled on the Defense Language Institute, with regional sites at Arizona State University and other collaborating institutions.

It is the very essence of the X-treme Literacy project to provide the verbally talented learner with the best learning environment for the development of second languages that can be achieved in and out of the classroom. The identification of linguistically brilliant youth; the use of a diagnostic-prescriptive model of assessment; the use of web-based instruction and online villages; and the provision of academic and career guidance make this a unique program. Our hope is that the outcomes will include the discovery and development of extraordinary linguistic talent, the demonstration of new technologies for instruction to classroom teachers, and the dissemination of these ideas throughout the schools.

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# **ISB4: Proceedings of the 4th International Symposium on Bilingualism**

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Kellie Rolstad, and Jeff MacSwan

**Cascadilla Press   Somerville, MA   2005**

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ISBN 978-1-57473-107-1 library binding (5-volume set)

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