

Critical Languages: Dual Language Immersion Education Appropriations Report

S.B. 80 (2007), S.B. 41 (2008) & S.B. 2 (2013)

Report of FY 2013 & FY 2014



Prepared by the

Utah State Office of Education

August 28, 2013

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UTAH DUAL LANGUAGE IMMERSION

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Critical Languages: Dual Language Immersion Education Appropriations Report

Program: Critical Languages: Dual Language Immersion

August 28, 2013

History:

In 2007, the Utah Legislature passed the Critical Languages Program (Senate Bill 80, Sponsor Sen. Howard Stephenson) This legislation created a series of initiatives that would have long lasting and profound effects on education in Utah. Beginning with the establishment of a Governor’s World Language Council, the USOE engaged business and education leaders regarding the economic and social benefits of a multi-lingual citizenry. The group followed through by creating the Utah World Language Roadmap, a comprehensive plan to prepare the populace - linguistically and culturally – for full participation in the global marketplace.

In 2008, the Utah Legislature responded by passing the International Initiatives (Senate Bill 41, Sponsor Sen. Howard Stephenson), which funded a ground breaking early language program addition to the Critical Languages program that would grow exponentially and push Utah to the forefront of language education in the nation. The elementary Critical Languages program was named the Utah Dual Language Immersion (DLI) Program, this Critical Language program offered incentives to local districts and schools to implement a program that required them to provide instruction exclusively in a language other than English for half of the elementary school day. Most of the programs began in first grade, with a few starting in kindergarten. Three languages were supported at the implementation outset in 2009: Chinese, French, and Spanish. Portuguese was added in 2012. Schools were provided the

necessary curriculum and professional development by the USOE to support the program, including help recruiting and training teachers.

It is important to note that these are neighborhood schools, and they continue to offer a traditional education program (with two exceptions, where the demand was simply too great, at Dixie Sun Elementary in Washington County School District and McPolin Elementary in Park City School District, thus the entire schools were converted into DLI by the school districts). They are all public schools, and student acceptance into the DLI program is done by lottery at the district level. If there is room, students from one attendance area may move to another in order to be in the DLI program, but there is a waiting list at almost every school in the program. Demand far outpaces supply and future expansion is recommended.

Program Model (see charts)

In return for volunteering to participate in the DLI program, all schools are required to implement the fifty-fifty model (50% of the day in English, 50% in the target language) and use two teachers, one who instructs exclusively in the target language for half of the day and a second who teaches in English for the remainder of the day. Children move from one teacher to the other, changing languages midway in the instructional day. They learn the same content that non-immersion children learn at their grade level, the difference being that they learn part of it in Chinese, French, Portuguese, or Spanish. They also are expected to reach the same learning outcomes at each grade level and take the same grade-level assessments (in English) that every child in the state must take.

In grades 1-3 math, social studies, science, health are taught in the target language. In addition, a part of the target-language portion of the day is spent in target-language literacy instruction so they learn to read and write in the new language. In the English portion of their day, students spend the majority of their time in English Language Arts, learning to read and write in English. They also spend a portion of the English time receiving reinforcement of

the instruction they receive in the target language, e.g. math and the other core content areas, to make sure that they learn the English vocabulary they will need.

In recognition of the increasing complexity of the curriculum at each grade level, most conceptual instruction in math and social studies is taught in English in grades 4 and 5; practical application of these subjects remains in the target language. In the sixth grade, social studies shifts back to the target language, and science shifts to English instruction. These curriculum changes in the upper grades purposefully allow more time in the target-language portion of the day for instruction focused on increasing student literacy and proficiency in the second language.

The Utah DLI program then offers two courses in grades seven through nine: one content course in the target language and a second course in advanced language study. Participating students are expected to enroll in Advanced Placement language coursework and complete the AP exam in 9th grade.

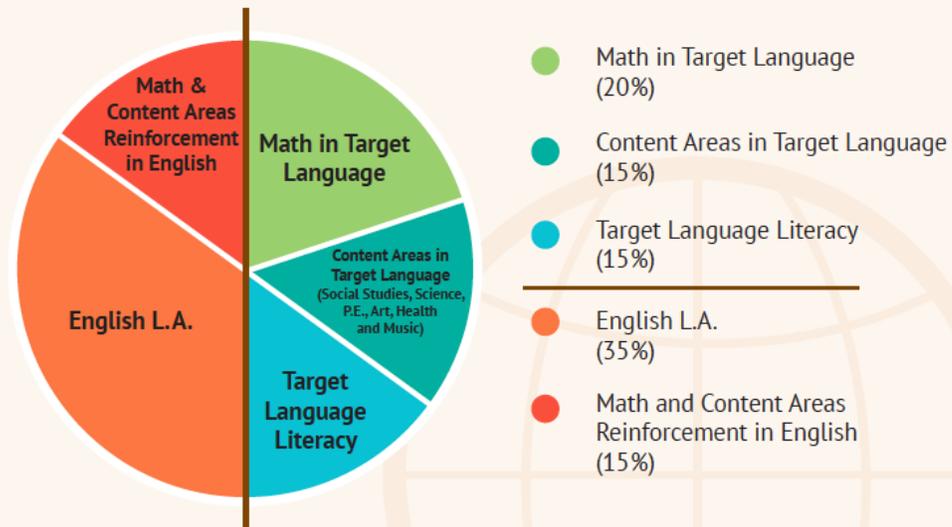
As of the submission of this report, only the Spanish program has students at the middle-school level as a few Spanish immersion programs were already in existence and had students in the upper grades when the DLI program was implemented in 2009. The Chinese and French DLI students have now reached 5th grade, and the Portuguese students 2nd grade.

In grades ten through twelve, students will be offered university-level coursework through blending learning with seven major Utah universities (UU, BYU, USU, WSU, UVU, SUU, DSU). Students are also encouraged to begin study of a third language in high school. Through this articulated K-12 Utah language roadmap, the state's students will enter universities or the global workforce equipped with truly valuable language and cultural skills at the Advanced Level of proficiency in all four skill areas (reading, writing, listen, and speaking).

Utah Dual Immersion Video:

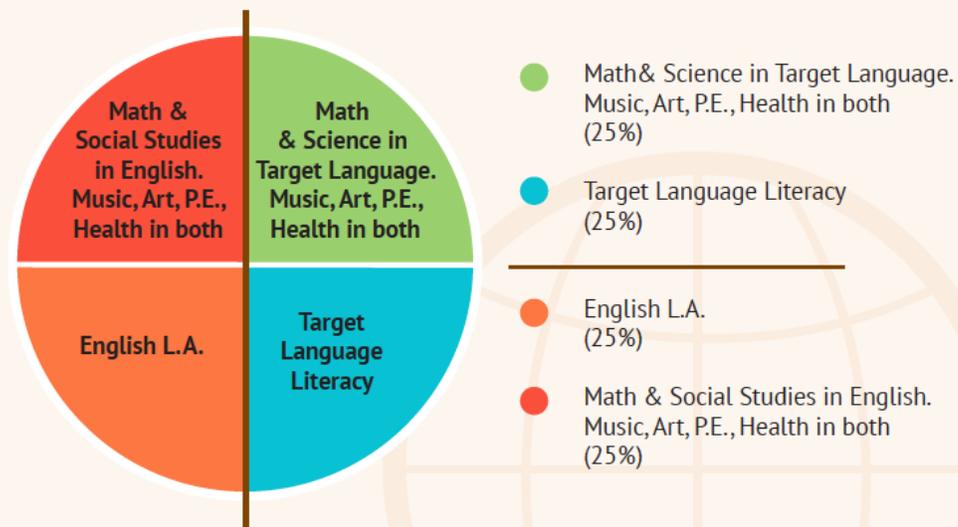
<http://www.youtube.com/UtahPublicEducation/#p/a/f/0/hTG0YFU8vWA>

Dual Language Immersion Instructional Time : Grades 1-3



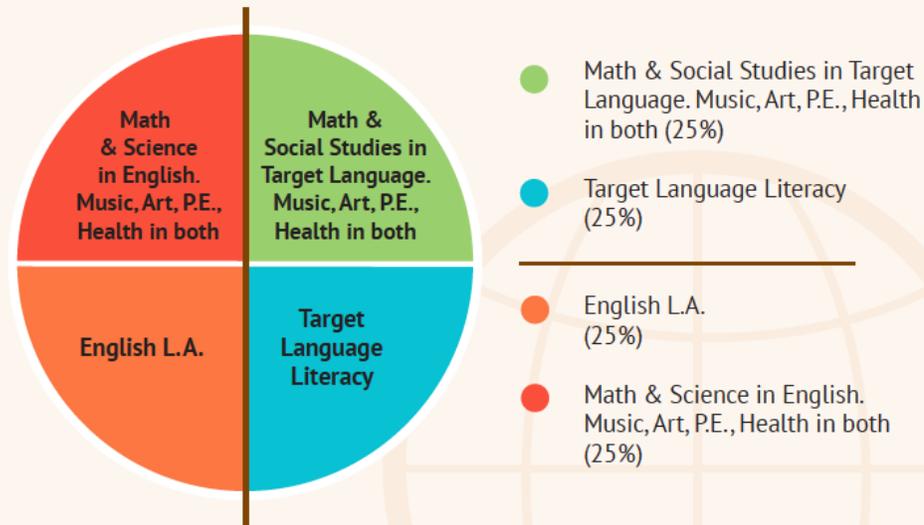
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Dual Language Immersion Instructional Time : Grades 4-5



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Dual Language Immersion Instructional Time : Grade 6



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Utah Dual Language Immersion Model Secondary Course Sequencing

To satisfy the requirements of the Utah Secondary Dual Language Immersion Model, students must enroll in 2 courses in grades 7-9, which are taught entirely in the immersion language (Chinese, French, Spanish, or Portuguese). Students will have the option to take the AP exam as a 9th grader. Upper division university courses will be offered in grades 10-12 to students who pass the AP exam.

Students will have the option to start a 3rd or 4th language in grades 10-12.



World Languages 3 Honors = Chinese 3 Honors, French 3 Honors, Spanish 3 Honors, Portuguese 3 Honors
 World Languages 4 Honors = Chinese 4 Honors, French 4 Honors, Spanish 4 Honors, Portuguese 3 Honors
 World Languages AP = Chinese AP, French AP, Spanish AP, Portuguese AP



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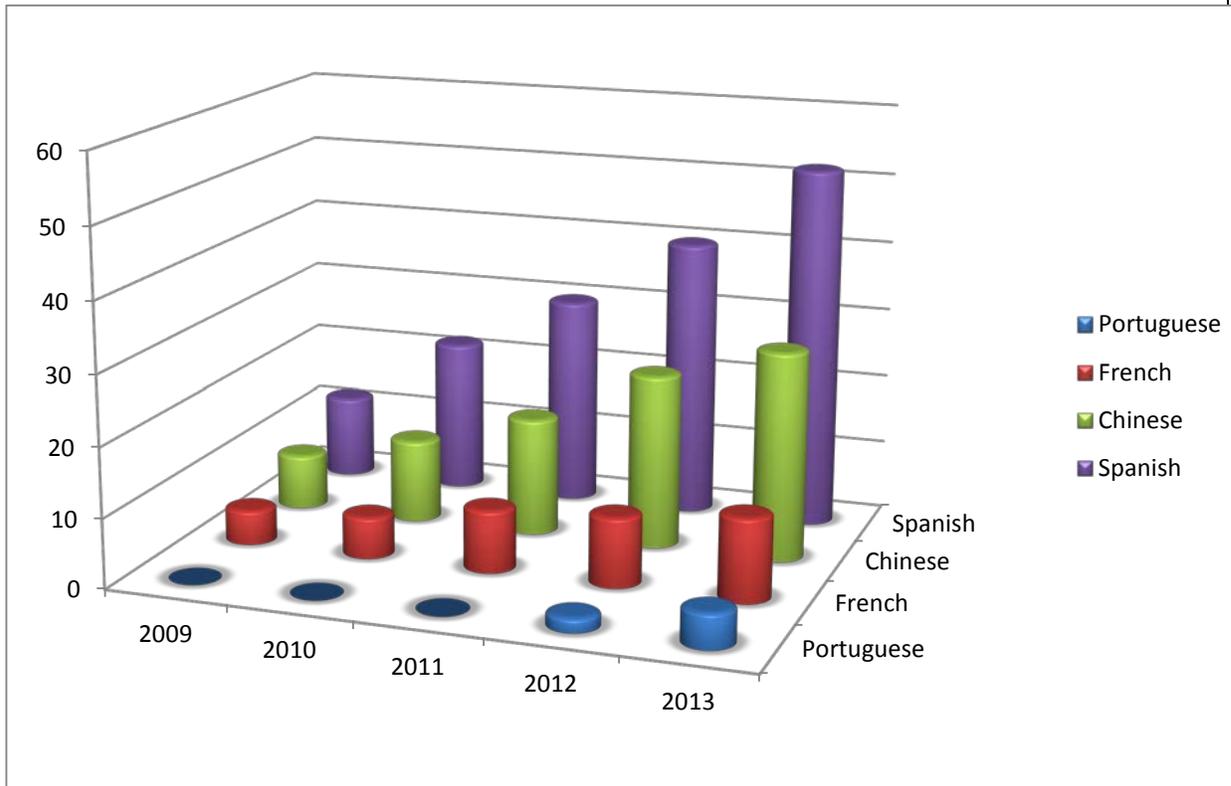
Growth

Currently there are 20 School Districts and 3 Charters Schools participating. The largest school district based on student population is Alpine School District with an approximate student population of 72,000, and the smallest school district based on student population is South Summit with an approximate student population of 1,450.

The growth of the program in the state of Utah has been phenomenal. In 2009 there were 1,400 students in 25 DLI schools (8 Chinese schools, 5 French schools, 12 Spanish schools). The second year of the program there were 5,500 students in 40 schools (14 Chinese, 6 French, 20 Spanish). By year three the program had grown to serve 9,400 students in 56 schools (17 Chinese, 9 French, 30 Spanish). In the current school year, 2013-2014, there are 20,000 students enrolled in 98 DLI schools (28 Chinese, 11 French, 5 Portuguese, 54 Spanish). The implementation of the program has not been without challenges but the challenge most frequently mentioned in any discussion with local and state officials is meeting the soaring demand by parents for Dual Language Immersion Instruction.

Although it is not within the scope of this report, it is important to note that more than thirty other states have visited the Utah program and multiple DLI programs are springing up around the nation based on the Utah model. The Utah program design and curriculum materials are being used in states like Arizona, Idaho, Montana and Wyoming in the Rocky Mountains, to South Carolina and Georgia in the south, as well as in a major initiative in Delaware and soon in Rhode Island. It is inarguable that this model of instruction in which public-school children of all abilities and socio-economic conditions, from urban to rural areas of the country and from homes in which many languages are spoken, offers a new kind of education.

Thousands of parents have entrusted their children's education to a new vision of education and thousands more will do so in years to come. The fact that this model is being disseminated so broadly only reinforces the need for future research demonstrating its effectiveness.



2013-14 School Year - 98 Dual Language Immersion Schools

School & Language	Address	Phone number	School District
Chinese - 28			
Cascade Elementary	160 North 800 East, Orem, UT 84097-4939	801-610-8102	Alpine
Alpine Elementary	400 E 300 N, Alpine, UT 84004	801-756-8525	Alpine
Riverview Elementary	273 West Aspen Hills Blvd., Saratoga Springs, UT 84045	801-610-8726	Alpine
Foothill Elementary	820 North 100 East, Brigham City, UT 84302	435-734-4916	Box Elder
North Park Elementary	2800 North 800 East, North Logan, Utah 84341	435-752-5121	Cache
Draper Elementary	1080 East 12660 South, Draper, UT 84020	801-826-8275	Canyons
Lone Peak Elementary	11515 High Mesa Drive, Sandy, UT 84092	801-826-8650	Canyons

Ridgecrest Elementary	1800 East 7200 South, Salt Lake City, UT 84121	801-826-9250	Canyons
Renaissance Academy	3435 North 1120 East, Lehi, UT 84043-	801-768-4202	Charter
JP Stewart Elementary	1155 North Main Street, Centerville, UT 84014	801-402-1850	Davis
Syracuse Elementary	1503 South 2000 West, Syracuse, UT 84075	801-402-2600	Davis
Heritage Elementary	1354 West Weaver Lane, Layton, UT 84041	801-402-1200	Davis
Muir Elementary	2275 South Davis Blvd., Bountiful, UT 84010	801-402-1550	Davis
Calvin Smith Elementary	2150 West 6200 South, Taylorsville, UT 84129	385-646-5020	Granite
Spring Lane Elementary	5315 South 1700 East, Salt Lake City, UT 84117	385-646-4906	Granite
Eastlake Elementary	4389 West Isla Daybreak Rd., South Jordan, UT 84095	801-446-0778	Jordan
Foothills Elementary	13717 Shaggy Peak Drive, Riverton, UT 84096	801-302-8599	Jordan
Monte Vista Elementary	11121 South 2700 West, South Jordan, UT 84095	801-254-8040	Jordan
Southland Elementary	12675 South 2700 West, Riverton, UT 84065	801-254-8047	Jordan
Sage Creek Elementary	1050 South 700 East, Springville, UT 84663	801-489-2860	Nebo
Wasatch Elementary	1080 North 900 East, Provo, UT 84604	801-374-4910	Provo
Arrowhead Elementary	545 Arrowhead Trail, Santa Clara, UT 84765	435-674-2027	Washington County
Bloomington Elementary	425 Man of War Road, St. George, UT 84790	435-673-6266	Washington County
Horizon Elementary	1970 South Arabian Way, Washington, UT 84780	435-652-4781	Washington County
Santa Clara Elementary	2950 West Crestview Drive, Santa Clara, UT 84765	435-628-2624	Washington County
Three Falls Elementary	789 South 700 West, Hurricane, UT 84737	435-635-7229	Washington County
Bates Elementary	850 East 3100 North, North Ogden, UT 84414	801-452-4580	Weber
Uintah Elementary	6115 South 2250 East, Ogden, UT 84403	801-452-4980	Weber
<u>French - 11</u>			
Providence Elementary	91 East Center, Providence, UT 84332	435-752-6010	Cache
Butler Elementary	2700 East 7000 South, Salt Lake City, UT 84121	801-826-7975	Canyons
Oak Hollow Elementary	884 East 14400 South, Draper, UT 84020	801-826-8875	Canyons
Samuel Morgan Elementary	1065 North Thornfield Road, Kaysville, UT 84037	801-402-3450	Davis
Foxboro Elementary	587 North Foxboro Dr., North Salt Lake, UT 84054	801-402-5050	Davis
Diamond Ridge Elementary	6034 West Mill Valley Lane, West Valley, UT 84118	385-646-4858	Granite

Morningside Elementary	4170 South 3000 East, Salt Lake City, UT 84124	385-646-4924	Granite
Fox Hollow Elementary	6020 West 8200 South, West Jordan, UT 84081	801-282-1818	Jordan
Trailside Elementary	5700 Trailside Drive, Park City, UT 84098	435-645-5680	Park City
Jeremy Ranch Elementary	3050 Rasmussen Rd. Park City, UT 84098	435-645-5670	Park City
Edgemont Elementary	566 East 3650 North, Provo, UT 84064	801-221-9984	Provo
<u>Portuguese - 5</u>			
Rocky Mountain Elementary	55 South 500 East Street, Lindon, UT 84042	801-610-8117	Alpine
Sunrise Elementary	225 South 455 East, Smithfield, UT 84335	435-563-3866	Cache
Bluffdale Elementary	14323 S. 2700 West, Bluffdale, UT 84065	801-254-8090	Jordan
Hillcrest Elementary	960 North 1400 East, Logan, UT 84321	435-755-2360	Logan
Lakeview Elementary	2899 West 1390 North, Provo, UT 84601	801-374-4990	Provo
<u>Spanish - 54</u>			
Cherry Hill Elementary	250 East 1650 South, Orem, UT 84097	801-610-8105	Alpine
Harvest Elementary	2105 N Providence Drive, Saratoga Springs, UT 84045	801-610-8709	Alpine
Orchard Elementary	1035 N 800 E Orem, UT 84097	801-610-8115	Alpine
Garland Elementary	450 South 100 West, Garland, UT 84312	435-257-2600	Box Elder
Lake View Elementary	851 South 200 West, Brigham City, UT 84302	435-734-4922	Box Elder
Heritage Elementary	925 West 3200 South, Nibley, UT 84321	435-792-7696	Cache
Alta View Elementary	10333 S. Crocus Street, Sandy, UT 84094	801-826-7600	Canyons
Midvale Elementary	362 West Center Street, Midvale, UT 84047	801-826-8725	Canyons
Silver Mesa Elementary	8920 South 1700 East, Sandy, UT 84093	801-826-9400	Canyons
Mount Jordan Middle	9360 South 300 East, Sandy 84070	801-826-7400	Canyons (S)
American Leadership Academy	898 West 1100 South, Spanish Fork, UT 84660	801-794-2226	Charter
North Davis Preparatory	1765 West Hill Field Road, Layton, UT 84041	801-547-1809	Charter
Eagle Bay Elementary	1933 West Clark Lane, Farmington, UT 84025	801-402-3800	Davis
Sand Springs Elementary	242 North 3200 West, Layton, UT 84041	801-402-3850	Davis
Buffalo Point Elementary	1924 South Doral Drive, Syracuse, UT 84075	801-402-8400	Davis

Farmington Jr High	150 South 200 West, Farmington, UT 84025	801-402-6900	Davis (S)
Legacy Jr. High	411 North 3200 West, Layton, UT 84041	801-402-4700	Davis (S)
Vista Elementary	4925 South 2200 West, Taylorsville, UT 84118	385-646-5067	Granite
William Penn Elementary	1670 Siggard Drive, Holladay, UT 84106	385-646-4960	Granite
Mill Creek Elementary	3761 South 1100 East, Salt Lake City, UT 84106	385-646-4912	Granite
Valley Crest Elementary	5240 West 3100 South, West Valley City, UT 84120	385-646-5061	Granite
Monroe Elementary	4450 West 3100 South, West Valley City, UT 84120	385-646-4918	Granite
West Kearns Elementary	4900 South 4620 West, Salt Lake City, UT 84118	385-646-5073	Granite(GT)
Eisenhower Jr. High	4351 South Redwood Road, Taylorsville, UT 84123	385-646-5154	Granite (S)
Evergreen Jr. High	3401 South 2000 East, Salt Lake City, UT 84109	385-646-5164	Granite (S)
East Elementary	255 East College Ave., Cedar City, UT 84720	435-586-2840	Iron
Heartland Elementary	1451 West 7000 South, West Jordan, UT 84084	801-565-7533	Jordan
Majestic Elementary	7430 South Redwood Road, West Jordan, UT 84084	801-565-7458	Jordan
Riverside Elementary	1220 West 8737 South, West Jordan, UT 84088	801-565-7484	Jordan
Herriman Elementary	13170 South 6000 West, Herriman, UT 84096	801-446-3215	Jordan
Welby Elementary	4130 West 9580 South, South Jordan, UT 84095	801-280-1456	Jordan
Bridger Elementary	1261 North 400 West, Logan, UT 84341	435-755-2345	Logan
Horizon Elementary	5180 South 700 West, Murray, UT 84123	801-264-7420	Murray
Westside Elementary	740 West Center Street, Springville, UT 84663	801-489-2800	Nebo
Bonneville Elementary	490 Gramercy Ave., Ogden, UT 84057	801-737-8900	Ogden
T.O. Smith Elementary	3295 Gramercy Ave., Ogden, UT 84403	801-737-8350	Ogden
Parley's Park Elementary	4900 N. Silver Springs Drive, Park City UT 84098	435-645-5620	Park City
McPolin Elementary	2270 Kearns Blvd., Park City, UT 84060	435-645-5630	Park City (W)
Canyon Crest Elementary	4664 North Canyon Road, Provo, UT 84604	801-221-9873	Provo
Timpanogos Elementary	449 North 500 West, Provo, UT 84601	801-374-4955	Provo
Emerson Elementary	1017 E Harrison Ave, Salt Lake City, UT 84105	801-481-4819	Salt Lake (GT)
Jackson Elementary	750 West 200 North, Salt Lake City, Utah 84116	801-578-8165	Salt Lake
Mountain View Elementary	1380 S Navajo, Salt Lake City, UT 84104	801-974-8315	Salt Lake

South Summit Elementary	535 East 300 South, Kamas, UT 84036	435-783-4318	South Summit
Discovery Elementary	650 West 1200 South, Vernal, UT 84078	435-781-3146	Uintah
Heber Valley Elementary	600 West 730 South, Heber City, UT 84032	435-654-0112	Wasatch
J.R. Smith Elementary	235 East 500 North, Heber City, UT 84032	435-654-2201	Wasatch
Midway Elementary	225 South 100 East, Midway, UT 84049	435-654-0472	Wasatch
Dixie Sun Elementary	1795 West 1230 North, St. George UT, 84770	435-673-8978	Washington County (W)
East Elementary	453 South 600 East, St. George, UT 84770	435-673-6191	Washington County
Hurricane Elementary	948 West, 325 North, Hurricane, UT 84737	435-635-4668	Washington County
Lava Ridge Intermediate	2425 Rachel Drive, Santa Clara, UT 84765	435-652-4742	Washington County (S)
Freedom Elementary	4555 West 5500 South, Hooper, UT 84315	801-452-4100	Weber
Majestic Elementary	425 West 2550 North, Ogden, UT 84414	801-452-4260	Weber

Legislative Funding: Critical Languages - Dual Language Immersion

Amount allocated for FY13: \$1,775,000 (\$975,000 ongoing and \$800,000 one-time)

Amount allocated for FY14: \$2,000,040 (ongoing)

Distribution by LEA for FY14:

Distribution of Dual Language Immersion Funds 7-1-13

Alpine SD	\$165,000
Box Elder SD	\$30,000
Cache SD	\$95,000
Canyons SD	\$292,000
Charters:	
American Leadership	\$10,000
North Davis Prep	\$20,000
Renaissances	\$15,000

Davis SD	\$190,000
Granite SD	\$234,000
Iron SD	\$10,000
Jordan SD	\$140,000
Logan SD	\$42,000
Murray SD	\$45,000
Nebo SD	\$105,000
Ogden SD	\$20,000
Park City SD	\$90,000
Provo SD	\$152,000
Salt Lake SD	\$35,000
South Summit SD	\$10,000
Uintah SD	\$10,000
Wasatch SD	\$30,000
Washington SD	\$165,000
Weber SD	\$40,000
USOE	\$95,000
TOTAL	\$2,040,000

Performance Measures

Agency Oversight

The USOE World Language & Dual Language Immersion Specialist, Gregg Roberts, closely monitors all schools and meets regularly with school principals and district administrators. USOE provides state-level leadership for the rapidly increasing number of Dual Language Immersion programs in Utah schools in the research, planning, professional development and curriculum development phases. For example, the USOE has: 1) developed

a generic model language and literacy framework that is aligned to the Utah Core Curriculum; 2) developed language-specific versions of that framework in Chinese, French, Portuguese and Spanish; 3) developed materials to enable the teaching of other content areas, *e.g.* math, science, art, health and social studies, in Chinese, French, Portuguese and Spanish so half of the school day can be taught in those languages while still enabling children to meet state standards in all content areas; 4) developed a model for the preparation and on-going support of Dual Language Immersion teachers, instructional leaders, and principals.

Scientific Research

Please review the *Time Magazine* article at the end of the report, which highlights the bilingual mind and Utah DLI, and quotes many Scientific research studies about the positive academic effects of bilingualism.

Student Outputs

Performance Measure 1: Utah students in Dual Language Immersion programs will reach age-appropriate levels of proficiency in the languages they are studying, and will meet all core content-area standards as required by Utah State law.

Participating LEA Outputs

Measure 1.1 The Utah model for K-12 Dual Language Immersion program is a statewide model of a well-articulated sequence of language study that reflects current research in foreign language education; provides an uninterrupted pathway for students to meet the National Standards for Foreign Language Learning; and prepares students to exit university programs at the Superior level of proficiency. (50-50 immersion program with half of school day in the target language during grades 1-6.)

Measure 1.2 The immersion programs uses performance assessments to measure learning, inform instruction and improve student proficiency in the target languages in a constant loop of assessment, feedback, and adjustment.

Measure 1.3 The Utah K-12 Dual Language Immersion program prepares students to reach the Advanced level of proficiency in the targeted languages by grade 12.

Measure 1.4 The Utah K-12 Dual Language Immersion program prepares students to meet all content area standards required by state law.

Performance Measure 2: Program teachers will be well prepared to teach in a standards-based immersion program that reflects best practices and current research in second language acquisition.

Measure 2.1 Teachers are knowledgeable about and skillful in teaching, assessment, and instructional planning through an on-going, job-embedded professional development program.

Performance Method 3: The project will collaborate and share with the profession nationally its activities and products.

Measure 3.1 The project shares in the state and nation the results and products of the project, including the generic and the language-specific literacy frameworks and curricula as well as the principles and processes developed for immersion programs.

Measure 3.2 Project staff collaborates with institutions of higher education and other districts and states working to develop and evaluate frameworks and curricula in the target languages.

Utah University K-16 Partners: Brigham Young University, Southern Utah University, University of Utah, Utah State University, Utah Valley University and Weber State University.

Proficiency Benchmarks / Grades 1-12

In order to provide clear targets to guide instruction, specific proficiency goals for every Dual Language Immersion language are set at each grade level in reading, writing, speaking, and listening.

FRENCH, PORTUGUESE & SPANISH

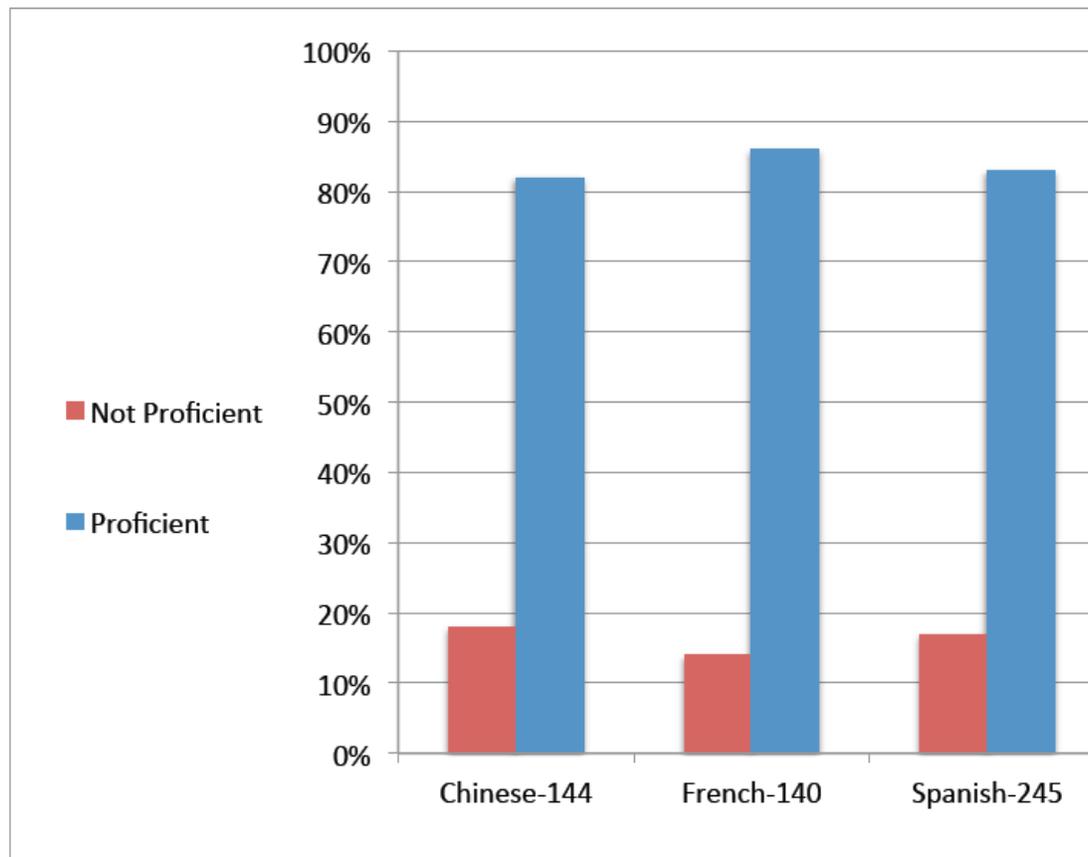
<i>Grade</i>	<i>Listening</i>	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>
1	Novice Mid	Novice Mid	Novice Low	Novice Low
2	Novice High	Novice High	Novice Mid	Novice Mid
3	Intermediate Low	Novice High	Novice High	Novice High
4	Intermediate Low	Intermediate Low	Novice High	Novice High
5	Intermediate Mid	Intermediate Low	Intermediate Low	Intermediate Low
6	Intermediate Mid	Intermediate Mid	Intermediate Low	Intermediate Low
7	Intermediate High	Intermediate Mid	Intermediate Mid	Intermediate Mid
8	Intermediate High	Intermediate High	Intermediate Mid	Intermediate Mid
9	Advanced Low	Intermediate High	Intermediate High	Intermediate High
10	Advanced Low	Advanced Low	Intermediate High	Intermediate High
11	Advanced Mid	Advanced Low	Advanced Low	Advanced Low
12	Advanced Mid	Advanced Mid	Advanced Low	Advanced Low

CHINESE

<i>Grade</i>	<i>Listening</i>	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>
1	Novice Low	Novice Low	Novice Low	Novice Low
2	Novice Mid	Novice Mid	Novice Mid	Novice Mid
3	Novice High	Novice Mid	Novice Mid	Novice Mid
4	Novice High	Novice High	Novice High	Novice High
5	Intermediate Low	Novice High	Novice High	Novice High
6	Intermediate Low	Intermediate Low	Intermediate Low	Intermediate Low
7	Intermediate Mid	Intermediate Low	Intermediate Low	Intermediate Low
8	Intermediate Mid	Intermediate Mid	Intermediate Mid	Intermediate Mid
9	Intermediate High	Intermediate Mid	Intermediate Mid	Intermediate Mid

10	Intermediate High	Intermediate High	Intermediate High	Intermediate High
11	Advanced Low	Intermediate High	Intermediate High	Intermediate High
12	Advanced Low	Advanced Low	Advanced Low	Advanced Low

	Not Proficient	Proficient
Chinese-144	18%	82%
French-140	14%	86%
Spanish-245	17%	83%



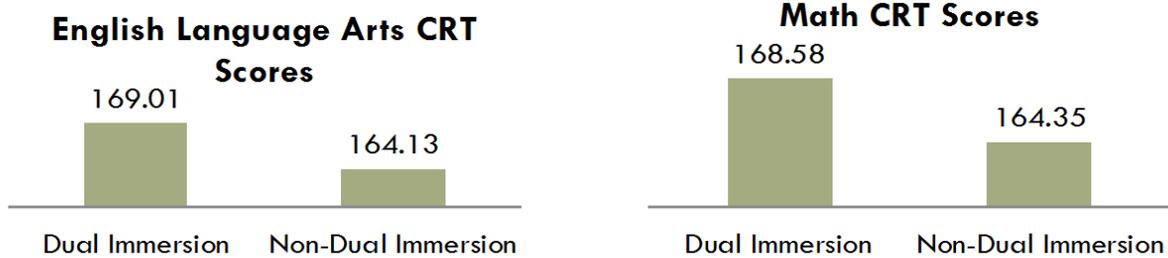
The results on the chart above come from 529 3rd grade students: Chinese 144, French 140, Spanish 245. In addition, they come from 5 school districts (Canyons, Davis, Jordan, Park City, Provo) and 12 schools: Chinese 3, French 3, Spanish 6 (4 one-way and 2 two-way).

3rd Grade CRT Data for 2011-12

Results - How are student level demographics and academics related to participation in DLI programs?

Students in DLI programs were more likely to read on grade level, be proficient in ELA, and be proficient in math than non-DLI students. Students in DLI programs were less likely to be chronically absent than non-DLI students.

Academic Indicator	Percent of DLI students in demographic group	Percent of non-DLI students in demographic group	Significant?
On reading level	81.1%	68.4%	YES
Proficient in ELA	85.9%	70.1%	YES
Proficient in math	83.2%	67.9%	YES
Chronically absent	3.2%	9.7%	YES



In Addition:

- Schools with DLI programs correlated with low mobility when compared to non-DLI schools in the same district.
- Students from “traditionally marginalized groups” achieve at the same level as mainstream students.
- Students with different demographic characteristics are represented in the DLI programs.
- Students in DLI programs are learning the academic content at the expected rate or higher while also acquiring another language.

The Benefits of Dual Language Immersion

1. **Second Language Skills:** Students achieve high proficiency in the immersion language.
2. **Performance on Standardized Tests:** Immersion students perform as well as or better than non-immersion students on standardized tests in English.
3. **Cognitive Skills:** Immersion students typically develop greater cognitive flexibility, demonstrating increased attention control, better memory, and superior problem-solving skills as well as an enhanced understanding of their primary language.
4. **Cultural Competency:** Immersion students are more aware of and generally show more positive attitudes towards other cultures and an appreciation of other people.
5. **Long Term Benefits:** Immersion students are better prepared for the global community and job markets where 21st century skills are an asset.

[Back to Article](#)[Click to Print](#)**TIME**

Monday, Jul. 29, 2013

The Power of the Bilingual Brain

By Jeffrey Kluger / Salt Lake City

Classrooms are places where little eureka moments happen—and teachers live for them. The sixth-grader struggling with the first week of algebra has no idea what a nonsensical instruction like "solve for x" means—and then all at once, blink, the light goes on. The second-grader grasps for the first time why a poem doesn't have to rhyme and then coins a perfect little word picture to prove it. For H*1*ne Cha-Philippe, a teacher at Morningside Elementary School in Salt Lake City, the moment happened when one of her first-grade girls said, "I eat the teacher."

Technically, that's not what the little girl said. What she said was "Je mange le professeur." Then she laughed in delight and pride, and Cha-Philippe did too. Just months before, the child had not spoken a word of French. Now she spoke many words. That day, she was working with the verb manger and was supposed to say, "I eat the banana." Instead she made a tiny, silly, first-grader's joke. She had stopped wrestling with the language and had begun playing with it—and with that, she had crossed a threshold.

"It was such a wonderful experience," says Cha-Philippe. "She realized that it was possible to combine words and make a joke in a language that wasn't her own."

All over Utah, elementary-school students are joking and studying and singing and reading and fluently speaking in languages not their own: French, Spanish, Mandarin Chinese and, soon, Portuguese. They are part of one of the most ambitious total-immersion language-education programs ever attempted in the U.S. It kicked off in the 2009 school year with 1,400 students in 25 schools and by this fall will include 20,000 kids in 100 schools—or 20% of all the elementary schools in the state, with nearly 95% of school districts participating up through grade 12. Competition for spots in the program is keen: families apply online before kids enter kindergarten or first grade—depending on the school district—and the ones who will participate are picked by lottery. Those who are chosen take half their subjects each day in the new language and the other half in English.

The idea behind the program has less to do with the usual talk about a globalizing world and America's need to become a polyglot nation if it's going to compete effectively with China and other rising economies—though that's part of it—and more to do with the nimble minds of the boys and girls doing the learning. Research is increasingly showing that the brains of people who know two or more languages are different from those who know just one—and those differences are all for the better. Multilingual people, studies show, are better at reasoning, at multitasking, at grasping and reconciling conflicting ideas. They work faster and expend less energy doing so, and as they age, they retain their cognitive faculties longer, delaying the onset of dementia and even full-blown Alzheimer's disease.

A bilingual brain is not necessarily a smarter brain, but it is proving to be a more flexible, more resourceful one. In a polyglot world, that's a lesson that a largely monoglot country like the U.S. ignores at its peril. "Monolingualism," says Gregg Roberts, a language-immersion specialist with the Utah state office of education, "is the illiteracy of the 21st century."

Wired for Words

When it comes to language, there's no such thing as starting too early--and it turns out the brain can be bilingual even before birth. The human auditory system is functional from the third trimester on, and the loudest thing an in utero baby hears is its mother's voice, speaking whatever language or languages she knows. Those sounds, with their characteristic rhythms and phonemes, are poured straight into the baby's brain and become comfortingly familiar.

Of course, it isn't easy to get inside a newborn's mind and determine what it does and doesn't like, but with language at least, investigators have figured out a method. The more vigorously a comfortable, well-fed baby sucks on a pacifier, the more stimulated it is by its environment. Developmental psychologist Krista Byers-Heinlein of Concordia University in Montreal has used this technique to study babies 3 days old and younger. The mothers of some of the children were monolingual English speakers; the mothers of the others spoke both English and Tagalog, a language common in parts of Canada where there are high concentrations of Filipino immigrants.

When the babies with pacifiers were played recordings from multiple languages, those with monolingual moms sucked harder only when they heard English; the others perked up both at English and at Tagalog. "You think, These babies are newborns--how can they be bilingual?" says Byers-Heinlein. "But their mothers' voices affected their preferences."

That exceedingly early start on language only accelerates as it goes along. Research by cognitive neuroscientist Janet Werker of the University of British Columbia and others extended Byers-Heinlein's work to babies who were a few months old, trying to determine if they could distinguish between languages by sight alone, watching silent videos of adults reciting lines from *The Little Prince* in English and French. In this case it was eye contact--the amount of time they spent looking before they got bored and looked away--that indicated their interest and recognition. From 4 to 6 months of age, babies from both monolingual English homes and bilingual French-English homes could tell the difference. But by 8 months, the monolinguals dropped out of the race, and only the bilinguals could manage the task.

At Spring Lane Elementary School outside Salt Lake City, the kids are a good deal more than 8 months old, but their brains are clearly still very language friendly. On a recent morning late in the school year, a class of first-graders learning Mandarin had broken down into smaller groups, working together on various assignments. One cluster of five kids sat on the floor, listening to a Mandarin-language story through headphones while reading along in books. The other children were busy with writing lessons. Their teacher, April Ridge, 30, who learned to speak Mandarin when she was 21 in preparation for two years as a Mormon missionary in Taiwan, was quietly coaching one little girl when the bell sounded. She looked up and made a series of rapid-fire announcements in fluent Mandarin that appeared to have something to do with getting coats on for recess or hands washed for lunch or who knew what, but if the instructions were a mystery to the monolinguals present, they made perfect sense to the kids, who scrambled and obeyed.

"They made steady progress through the year," Ridge says. "We started school in August when they could speak only English. They were able to follow directions in Mandarin by January. After that came speaking, then reading, then writing. Now I hear them at recess, mixing Mandarin and English. They help each other out and remind each other of words they forget."

Such cooperation is a formal part of the curriculum in the schools--what the teachers call "pair-share," with kids teaming up and turning to a designated buddy for a lost word or concept. That's a good thing, particularly when it comes to Mandarin, since the Utah school system doesn't fool around. The students are taught to read and write in traditional Mandarin characters, with pinyin--the phonetic, Roman-alphabet form of writing Mandarin--not introduced until the third grade and then only for the more difficult words.

Utah's program got its start in 2009 under then governor and later ambassador to China Jon Huntsman, the rare American political figure who is fluent in Mandarin. Huntsman argued that multilingualism in education would be increasingly essential in

the 21st century for students, businesspeople and government officials, and while many people outside the state speculated that the missionary work of the Utah-based Mormon church was the real driver behind the plan, state education officials deny that. "This really was mostly about the state and millennial parents seeing the need for language training," says Roberts.

The program is a surprising bargain by government standards. It's funded by the state legislature at an average of \$2 million per year, plus a supplemental appropriation of \$10,000 per school per year to buy books. With the program entering its fifth year, that means grades 1 through 4 have already been supplied, with the remaining grades set to be added each year as the oldest kids move along. Both students and teachers are reminded to keep the books in good enough shape that they can be reused each year. "We always tell them, 'Take care of them, because when they're gone, they're gone,'" says Carolyn Schubach, associate director for advanced learning in the Granite school district.

Kids who make it through eighth grade in the language program take advanced-placement courses in ninth. For 10th- through 12th-graders, the state education office is collaborating with the University of Utah and Brigham Young University to offer college-level courses. Whatever Utah is doing, it must be doing it right: so far, officials from 22 other states have dropped by to study the program with an eye toward launching their own.

The Polyglot Brain

It's too early to measure exactly what the lifelong benefits of early language training will be, but all of the science suggests that they will be considerable—and that some of the differences will be physically detectable in the brains of the polyglot kids. Research psychologist Ellen Bialystok of Toronto's York University cites brain scans of London cabdrivers, who are celebrated for their down-to-the-last-alley knowledge of their city's streetscape. Those scans show greater development in the regions of the brain responsible for spatial reasoning. Similar findings have turned up in the motor-control regions that govern the fingers of violinists and other musicians. Still, the cause and effect are murky here. "Does the training cause the brain changes," Bialystok asks, "or do you select into being a cabdriver or a musician because you already have a brain that's inclined toward those skills?"

Last year in Sweden, psychologists at Lund University decided to test that idea when it comes to multilingualism, scanning the brains of the incoming class at the Armed Forces Interpreter Academy in Uppsala, where students undergo a grueling program that takes them from no knowledge of an unfamiliar language like Arabic or Dari to total fluency in 13 months. As a control, the investigators scanned other students entering a similarly rigorous program in medicine or cognitive science for the same length of time. At the end of the period, all the students were rescanned. Among the language students, there was detectable growth in the hippocampus, which helps govern memory and mastery of new material, and in three areas of the cerebral cortex, where higher-order reasoning is processed. Among the other students there were no such changes.

Biologist Nina Kraus of Northwestern University has used scalp electrodes to record the activity of the auditory region in the brain stem, looking for how it behaves in bilinguals. What she found is that people who know more than one language are better than monolinguals at picking up speech-relevant sounds, such as key pitches or rhythms, out of a confusing soundscape, producing a telltale blip in the scalp readings. "As people use sound in a meaningful way," Kraus says, "the nervous system changes."

Bialystok believes the relevant difference in the brains of bilinguals involves less the density or shape of the gray matter—the neurons—than the white matter, the myelin sheathing that insulates neural connections. She and her colleagues conducted scans showing healthier myelin in the frontal lobes and the corpus callosum—the neural cable that connects the two hemispheres of the brain—in bilinguals than in monolinguals. "Structural differences are where the new science is unfolding," she says.

Brain Be Nimble

But it is the knock-on effects—not how the brain looks but how it functions—that argue most for learning additional languages, and it appears that the bilingual brain is simply more efficient. The constant toggling that comes from having to choose between

two words for every object or concept in your world is a total-immersion exercise in what cognitive scientists call task switching and what the rest of us call trying to do 17 things at once. Every time you interrupt an e-mail to pick up the phone, then interrupt the phone call to respond to someone who pops into your office, and then go back to the phone and the e-mail, the tracks in your brain must clank one way or the other. It's more challenging still when you're handling multiple tasks not sequentially but simultaneously.

How deftly any one person responds to these messy real-world challenges is hard to measure, but there are some good experimental proxies. In one, known as the Stroop test, subjects are flashed the names of colors on a screen, with the word matching the actual color of the letters, and are told to say the color's name or hit a key indicating what it is—a task nearly anyone can do instantaneously. Next they are flashed mismatches—the word red printed in blue, say—and told to ignore what the word says and announce only the color. This is a lot harder than you think, especially when you don't know when you'll get a matched example and when you'll get an unmatched one. Almost universally, bilinguals are faster and make fewer mistakes than monolinguals. Related studies have shown that the multilinguals' advantage is especially pronounced not in young adulthood, when the brain's executive functions are operating at their peak, but among kids and seniors, whose cognitive capabilities have either not fully come online or are starting to slip.

"The loss of efficiency when we rotate among tasks is called the global switch cost," says Bialystok. "Everyone slows down some or makes more errors, but multilinguals in all age groups have less of a drop-off." If that increased efficiency plays out in people's lives outside the lab—and there is no reason to think it doesn't—that would confer a real advantage over monolingual classmates, colleagues and others.

The advantages of multilingualism in the senior population are especially important—and comparatively easy to measure. Cognitive neuroscientist Brian Gold of the University of Kentucky tested seniors in the 60-to-68 age group on several of the familiar task-switching tests and found that bilinguals were more accurate and also faster than monolinguals. When he scanned the subjects with functional magnetic resonance imaging while they worked, he also found that the bilinguals' brains were less rather than more active in the relevant regions than the monolinguals'. That's actually a good thing: greater activity means the brain is working harder, breaking a sweat it wouldn't have had to in its younger days. "Older people have to activate their brains more in general than younger people do," says Gold. "But bilingual seniors have to do it less." Bialystok has studied seniors suffering from serious age-related cognitive decline and those who are still high functioning and estimates that on average, bilinguals get an extra 4.1 years of clarity before symptoms of any form of dementia set in; those who develop Alzheimer's specifically get an extra 5.1 years.

None of that is to say that the monolingual middle-ager who is worried about dementia can simply take up a language and reap the same benefits a lifetime bilingual would. "The practical reality," says Gold, "is that adults are simply less likely than children to learn and continue to use a second language because they have to go far out of their way to do it, whereas it comes gift-wrapped for kids." At best, he says, language lessons in adulthood fall into the couldn't-hurt category—one more way to keep the aging brain active.

The children in the Utah grammar schools are, of course, thinking about none of this yet, with their brainpower and their language talents still on a steep upward arc. The incoming fifth-graders who have been with the program since its first year represent an educational vanguard, the leading edge of a living longitudinal study that renews itself each year as more and more families clamor for spots in the participating schools. The planned addition of 20 to 25 schools per year for the next five years should help satisfy that growing demand.

For the Utah teachers and kids, policy issues matter a lot less than the simple day-to-day richness of bilingual living. Third-grade French teacher Georgia Geerling had never taught below the level of community college and high school before she took a job at Morningside Elementary School, and she was not fully prepared for what the experience would be like. "When they hug me, I'm so touched," she says. "We had an assembly, and the kids were all onstage singing in French, and I just cried. They're so wiggly!" That's as fair a way of describing third-graders as any. But their restless bodies reflect equally active, playful, energetic brains.

Learning the lyricism and the magic of another language can make them better brains too.



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