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ABSTRACT

This is a report on the first year of a pilot program for building reading comprehension in all subject areas, conducted in six school districts located in a rural area near Phoenix, Arizona, during the school year 1972-1973. Over 50 percent of the high school students were bilingual or bi-cultural. In order to remedy reading retardation, teachers were asked to identify and define difficult vocabulary items and idiomatic phrases and to make copies available to the students. The idea was to bring students up to the level of material rather than to bring the material down to the students' level. The results of this program indicate an average gain in reading comprehension of 3.2 for the freshman class. Teachers felt that the most important result of the program was an improvement in the students' self-image. A copy of the student questionnaire and responses by students as indicated in a preliminary report are included. (LL)

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THE TOLLESON STORY

THE TOLLESON SIX SCHOOL READING PROJECT

*Reading project to help all students read grade
level material with adequate comprehension.*

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THE TOLLESON STORY

THE TOLLESON SIX SCHOOL READING PROJECT

A pilot project to help all students read grade level textbooks with adequate comprehension.

BY

GRACE A. BLOSSOM

July, 1973

MEMBER SCHOOLS OF THE TOLLESON SIX SCHOOL READING PROJECT

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Littleton Elementary Schools
Quentin Aycock, Superintendent
Mack Courtland, Principal
Fred Griffiths, Principal

Pendergast Elementary School
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John Bartell, Principal

Tolleson Elementary School
Matt Levario, Superintendent and
Chairman of the Project
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Tolleson Union High School
Edward T. Walsh, Superintendent
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elementary grade level.

*A special note of appreciation to Dr. Weldon P. Shofstall,
Superintendent of the Arizona Department of Public Instruction,
and his staff. Without their encouragement and support this
project might not have been so fruitful.*

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September, 1973

During the immediate past school year, the Arizona Department of Education watched with keen interest the reading program being conducted in the Tolleson area. Early reports from the previous school year indicated an inordinate degree of student success was being registered in the area of reading at the ninth grade level as a result of a new reading technique called "glossing." An independent educational audit was sponsored by the Department of Education which confirmed earlier evaluations.

This report is actually two reports combined to provide information to those educators interested in learning more about the glossing technique as utilized in the Tolleson area. The first report was authored by Mrs. Grace Blossom, Consultant, upper elementary grade and high school level. The statistical section, starting on Page 24, represents some of the data collected and analyzed as a part of the evaluation.

A handwritten signature in cursive script that reads "W. P. Shofstall".

W. P. Shofstall
Superintendent of Public Instruction

THE TOLLESON STORY

(A report on the first year of a pilot program for building reading comprehension in all subject areas. This program was conducted in six school districts located in the rural area approximately 10 miles west of Phoenix, Arizona, during the school year 1972-73.)

The English language is considered one of the most difficult of modern languages to learn. Difficult because of the huge size of its vocabulary—some 600,000 words, the use of idiomatic expressions, and the many exceptions to the rules of grammar. It has been reported that more words have come into being in the past fifty years than in the previous nine hundred. Sky lab alone has enlarged our space vocabularies by some 2,000 words, phrases and abbreviations, not to mention the additions from the drug culture, the concern over the civil rights of minority groups, law and order, ecology and pollution.

Our use of idioms is the despair of those who must learn English as a second language. As a Pima Indian student said, "The professor said 'That theory won't hold water', and I tried and tried to think of what could be the connection between that theory and water." Native speakers of English could carry on a fairly lengthy conversation totally in idioms. Such phrases as "Get on the ball," "Don't let the cat out of the bag," "Get all spruced up," "Talk like a Dutch uncle," — the list is almost endless and forever being enlarged. The story of Mussolini's heart attack and the foreign correspondent who got the message, "Mussolini's ticker's on the bum" past an Italian censor is part of WW II lore.

Added to these difficulties is still another characteristic of the language that occurs in the textbooks at about the fourth grade level, that is, the shift from conversational English to literary English. In the primary grade texts the young child encounters a language, even though he is bilingual or bi-dialectal, that he has at least heard before.

The primary grade readers have many pictures to help the students read the pages with a satisfactory degree of comprehension, but at the high third grade this begins to change and the student encounters another form of English, literary or non-conversational. In addition, the pictures have disappeared from page after page. The simple sentences of "Grandmother is little, fat and busy" from his first reader becomes "Grandmother is tiny, plump and bustling" in the fourth grade book. Later in the upper grades the same sentence might read "Grandmother is petite, obese and occupied."

The child who comes into our schools not prepared to cope with the literary English of the upper grade texts faces an almost insurmountable barrier. He must now read for content in a language which in many instances is to him akin to a foreign language. Not only is the vocabulary far more difficult but the sentences are much longer with embedded dependent clauses which tend to challenge even the child who has a high proficiency in the language. In many cases the English language deficient student has learned the mechanics of reading, i.e., phonics, and has become an efficient word caller. The upper grade teacher hears him read passages from a text, often fluently, and wonders why he does so poorly on the test

that follows the assignment. Many times to the bilingual, bi-dialectual or low vocabulary English speaking student the sheer amount of vocabulary alone facing him in regular grade level textbooks can be the cause of failure.

In an effort to solve the problem, high interest-low vocabulary material was developed. The fact that these materials did not resolve the problem is attested by the fact that the drop-out rate is increasing in the inner cities and among the lower economic segments of our population. And to those who stay with it for the four years of secondary school we put a diploma in their hands and deceive them into thinking they have a high school education. But it is not a total deception as any student who has used high interest-low vocabulary materials will tell you. He senses that he is being told that he is too stupid to use regular grade level materials. In writing for this field the author of high interest-low vocabulary materials actually does two things. He replaces the "big" words with words more commonly used and shortens the long involved sentences to ones that approximate talking English.

The vocabulary in upper grade level texts increases more rapidly than most teachers are aware. In the basal readers alone the load can be overwhelming for students whose language proficiency is low. For example, the following table gives the vocabulary increase from a widely used set of basal readers. Keep in mind that words which have been previously introduced are not counted again when prefixes or suffixes are added. Nor are verbs counted again when another tense is used.

First grade	about 200 words
Second grade	an additional 449 words
Third grade	an additional 682 words
Fourth grade	an additional 700 words
Fifth grade	an additional 1000 words
Sixth grade	an additional 1300 words

To the student who reaches the upper grades with a limited knowledge of English, this rapid increase of reading or non-conversational vocabulary in the texts, plus the usage of longer more complicated sentences, can represent an almost insurmountable handicap. But it is not always the bilingual or low economic class of students who falter at this point. It can be any student who lacks proficiency in the English language.

While the foregoing discussion of the English language and the difficulties it presents to present-day students is to a large extent theoretical, i.e., that the English language is the basic cause of reading retardation, one high school and the five elementary schools that feed into it decided to test its validity. The administrators of these schools met several times in an effort to work out techniques that would make practical applications of the theory of language deficiency in relation to reading retardation.

Tolleson is located about ten miles west of Arizona's capitol city of Phoenix. It is largely a ranching and farming community bordered on the south by the Pima-Maricopa Indian reservation. Into the elementary schools and the high school come the children of the ranchers, the Mexican-Americans and the Indians. Better than 50 percent of the high school students are bilingual or bi-cultural; some of the students come from wealthy homes of ranchers and businessmen, many come from the laboring class, some of which are migrants.

As with any school with this wide ethnic and economic range, there existed in the schools of the Project a real problem in the area of reading comprehension. On the high school level, the drop-out rate is about the same as the national norm for such schools. The number who graduate from the eighth grade and do not enter high school is perhaps a little higher. It all adds up to a problem which deeply concerned the boards of education and administrators of the various elementary schools and the high school. As a rule, by the time students reach the upper grades they are fairly fluent in conversational English. Living in an English speaking community and school environment the oral aspect of the language is really no great problem on the upper grade level. Such is not the case, however, with the literary aspect of the language that these same students encounter in the textbooks. Of the 320 freshmen who entered Tolleson Union High School in September of 1972, 123 read on a third or fourth grade level. Fifty-nine read on or above the ninth grade level. It would be interesting to see the reading scores of the seniors you graduated in May of 1972. Undoubtedly, some read well below the ninth grade level. However, the tragedy is that a great majority of those who entered as freshmen four years earlier with reading problems were no longer in school.

Therefore, to put into effect the new concept for remedying reading retardation, certain guidelines were drawn up.

All teachers were asked to:

Accept for one year the premise that reading retardation is the result of a lack of proficiency in the English language.

Accept the responsibility for bringing the students up to regular grade level proficiency in that teacher's subject.

To accomplish this, all teachers of academic subjects were asked to:

Read the day's lesson and underline the difficult vocabulary items and idiomatic phrases.

List these items on a ditto or stencil and define them in simple English terms.

Give only the definition for the item as it was used in the lesson. Use no words in the definitions that were unknown to the academically lowest student.

Prepare a copy of the glossary for each member of the class regardless of his or her proficiency in the language.

Spend five to ten minutes of class time going over the glossary and discussing the items before proceeding with the lesson.

Use, as far as possible, grade level materials for basic instruction. In other words, bring the student up to the material rather than the material down to the student.

And finally:

All testing would be done through the English classes and all students would be told their test results as soon as possible after taking the test.

To fully explain the innovative approach to the teachers, the administration established a one-week workshop for the last week of August. One hour of credit was offered; the fees being paid by the Board of Education. Seventeen teachers from the high school and two from the elementary schools attended. During the workshop, the technique of writing glossaries for the grade level textbooks was introduced and teachers began developing such materials for their own texts.

The technique is by no means new. It has been used in foreign language teaching for many years. In fact, one cannot imagine using a basic text in German, Spanish or French without an adequate glossary. Therefore, the idea of using the technique for English language textbooks with language deficient students is merely an extension of a sound basic educational practice.

Experience taught us that when a teacher actually begins to select the difficult vocabulary items from the text he teaches in the classroom and finds simple, easily understood definitions for them, he begins to understand the problem. It is at this time that an actual understanding of the language problem becomes a reality. Just talking about it in a class or workshop situation somehow fails to accomplish what the actual preparation of a glossary does. The teacher can be thoroughly cognizant of the shift from conversational English to literary English that takes place between lower and upper elementary levels and yet not fully comprehend the value of a teacher-made glossary.

At each session of the week-long workshop, about one hour was spent in exploring the problem and its various aspects—the size of the English language, the necessity of each teacher helping students cope with the vocabulary of his or her subject, the necessity of its being a continuous, methodical progress and the value of glossaries to the student as a means of defining the English language as the problem rather than student stupidity. This pre-school workshop enabled teachers to have a working stockpile of glossaries before school opened as their preparation is time consuming. That such glossaries can be used year after year is a redeeming feature in this Project.

Another very important factor in the success of the Project was the continuous attendance in the workshop of the principal and the frequent visits of the superintendent. As a result, when school opened these administrators were fully informed as to the underlying philosophy. They also provided the encouragement needed by teachers to insure the success of the Project.

When school opened in September, the Project was again presented in four-hour workshops at each of the participating schools. The concept of building English language proficiency, while simple in nature, proved to be a giant mental step for some teachers. Asking them to shift emphasis from the student, per se, to his proficiency in the language was a real challenge. Then, to ask teachers new to the idea to spend literally hours writing glossaries with no assurance that such a procedure would increase proficiency in reading comprehension was, to some, asking for a dedication beyond the call of duty.

It was at this stage that administrative support became most important. On the high school level, teachers were asked to attend group meetings with the principal and coordinator. Three such meetings, spaced at about two-week intervals and lasting from perhaps 15 minutes to an hour, were held. At this time, procedures in presenting glossaries were discussed and teacher questions were answered. The meeting served a definitely supportive purpose until the second test was administered nine weeks later. At that time, obtained

results seemed to indicate, even at such an early date in the Project, that with few exceptions students were benefiting in various degrees by the use of teacher-prepared glossaries.

If we consider that the step from one grade to the next is, in part, mental maturity and also a coping with an increased vocabulary load, then it would logically follow that if the student's vocabulary keeps pace with the increase in vocabulary from one reader to the next, he in turn should be able to continue to read on grade level. Mental maturity is a natural process, but vocabulary development is a function of education. Reading achievement is a function that cannot be left to chance or to hit and miss techniques. It is one that must be constantly in the minds of all teachers who work with low vocabulary students and indeed, it would seem from our experience, all students.

The dictionary or irrelevant lists of words on the chalkboard, or even oral discussions, are all techniques used by good teachers. They are helpful, however, they are not the answer. If they were, we would have had all students reading on grade level long before this. Dictionary work is too time consuming. Often there are words used in definitions that are unknown to the student or there are so many definitions for a single entry that the student is confused. For example, we encountered the word "mummy" in one of the stories we were reading. A student went to the dictionary to look it up. A moment later he returned saying "I think I know what it means, but what does e-m-b-a-l-m mean?" Often, too, the student needs the meaning of an entire phrase or of a plural and rarely are these used as dictionary items.

Lists of words on the chalkboard are not complete enough. Usually only the technical or unusual terms are listed. Sometimes the teacher lacks the time or there are too many subjects taught in a self-contained classroom; rarely does a teacher teach five straight classes of the same subject. Board or dictionary work usually does not allow for individual differences or further study. The more able learner may not need a second look, but for the low vocabulary student this is rarely an adequate way of building reading comprehension. There is a difference between teaching vocabulary and teaching reading comprehension. In teaching reading comprehension, the vocabulary taught is immediately relevant. It comes directly from the daily lesson and has the one and only purpose to help students read that lesson with better comprehension. The student knows that the items are taken from a certain lesson and defined in language he can understand. If he can have a meaning for the unknown vocabulary items in that lesson, he knows that he can read that lesson with better comprehension, which in turn, will result in better grades on his report card. A glossary for the day's lesson in a science or history text is just as relevant as is a glossary for a French or Spanish lesson.

The second aspect of relevancy in teacher-prepared glossaries is that the teachers of each subject prepare their own glossaries. To expect a reading teacher to write a glossary for science or home economics terms is unrealistic. The teacher of each subject is far better prepared to teach the vocabulary of his or her own subject than any other member of the faculty. Such a teacher learns the needs of the class and often, as we discovered, they learn the need is not to gloss just the technical terms but the content words also. The teacher soon learns to include these content words and even whole phrases rather than just a list of the new technical words introduced in the lesson. This is clearly illustrated in the examples of glossaries from the various teachers of the Tolleson Six School Reading Project included in this report.

In preparing a glossary, the teacher first reads the lesson and underlines all difficult vocabulary items and phrases. The English and reading teacher must watch for idiomatic phrases as many students, especially bilinguals, do not know the meaning of such phrases as "kick the bucket," "just get under the wire," "sharp as a tack" and many, many others.

Lessons need to be glossed down to the level of the lowest member of the class academically. Doing this allows those students to build a reading vocabulary rapidly, and compete on a more equal footing with the members of the class who have a better knowledge of the language. Each member of the class should be given his personal copy, thereby requiring only a minimum of class time to be spent on presenting each vocabulary item. This procedure meets individual needs to the detriment of no one. After the initial presentation in which every vocabulary item is covered, each student takes what he needs from the glossary sheet to insure his reading the day's lesson with satisfactory comprehension. This makes the glossary sheet immediately relevant to every member of the class. An additional by-product seemed to be that teachers were far more sympathetic to the language problem of the students and were going into the classroom better prepared to teach the day's lesson. It is not at all uncommon for a teacher to remark, "I never realized that textbook was so hard."

Today, with the strong emphasis on accountability, a glossary is absolute proof of the teacher's willingness to prove himself. We cannot separate the language from the subject, because without the language there would be no subject. As Dr. Neil Postman states it so well:

To begin with, we are in a position to understand that almost all of what we customarily call "knowledge" is language. Which means that the key to understanding a "subject" is to understand its language. In fact, that is a rather awkward way of saying it, since it implies that there is such a thing as a "subject which contains language." It is more accurate to say that what we call a subject is its language. A "discipline" is a way of knowing, and whatever is known is inseparable from the symbols (mostly words) in which the knowing is codified. What is biology (for example) other than words? If all the words that biologists use were subtracted from the languages, there would be no "biology." Unless and until new words were invented, then, we would have a new "biology." What is "history" other than words? Or astronomy? Or physics? If you do not know the meaning of "history words" or "astronomy words" you do not know history or astronomy. This means, of course, that every teacher is a language teacher. We do not mean this in the sense that is implied when a principal reminds his Science, Math, and Social Studies teachers that they are also English teachers.

The principal usually means that he wants everyone to check for spelling, punctuation, and grammar on the papers that students hand in. We mean that Biology, Math, and History teachers, quite literally, have little else to teach but a way of talking and therefore seeing the world. The new English, the new Math, the new Social Studies represent new languages. And a new language inevitably means new possibilities of perception.

Still another result of the teacher-made glossaries, and this may be of even greater importance than the point described previously, is the defining of the problem itself to the students. Many students feel stupid because they do not read with adequate comprehension or know the meaning of words. This is a very human trait, if we hark back to our own

college days. A glossary seems to point out to the student that it is the difficultness of the English language not their stupidity that is causing the problem. Dr. Bruce Wainwright, program evaluator for the Arizona State Department of Education, pointed out that if glossaries are instrumental in changing the student's self-image, that alone would justify their use. If students would come to understand that the English language is their adversary, they would, in turn, understand that the school is a friend.

The initial use of teacher-prepared glossaries entailed hours of work on the part of academic teachers. This was pointed out to the participating teachers before the Project started. The original glossing does take time, but the redeeming factor is that the next time the same lesson is taught it is only a matter of reproducing the already prepared glossaries. Our teachers found that usually by the end of eight or ten chapters, glossing on that text could almost be dropped. This was due to the fact that almost all writers have certain vocabularies that they use repeatedly. It is the English and reading teachers who carry the heaviest load. This is so because the author of each selection in a reader or an anthology has a different vocabulary and style. Think, if you will, of the difference between O. Henry and Edgar Allan Poe.

Student acceptance of glossaries was a big question at the beginning of the school year. We were very concerned that students would reject the concept as being a burden. Such was not the case. We were careful to use glossing only to build reading comprehension. No spelling, parts of speech, or writing of sentences were used. The last, writing of sentences, could probably be used in very limited situations and then sparingly, but we took no chances. Class time spent presenting and discussing the glossary materials was kept to a minimum. Students were told the purpose of the new technique and, while at first it took some of them a week or two to realize its value, later they began to ask for glossaries if they were not forthcoming. We had a theory that students throw out what they feel is irrelevant, so we watched the trash cans. Where the hundreds and hundreds of glossary sheets are we do not know, but we do know that they did not end up in the school's trash cans! Teacher attitude is extremely important in the success of the Project. This was pointed out to a member of our faculty who was glossing under duress. When he remarked that his students were just throwing their glossaries on the floor, other teachers pointed out that they were only reflecting his attitude.

The importance of teacher attitude cannot, in fact, be over emphasized. If the important factors in the success of the Project could be listed in rank order, teacher attitude would be at the top of the list. What goes on in the classroom between the student and the teachers is the final key to success. If the teacher fully understands and accepts the concept that proficiency in the language is the key to success in any field of endeavor, that teacher will accept the responsibility for helping the student in any way he can.

Benjamin Lee Whorf, one of the most respected men in the field of linguistics, stated that all higher levels of thinking are dependent on language and that language is cardinal in rearing human young, in organizing human communities, and in handing down the culture from generation to generation. Thus, man becomes the talking animal and his power to reason constitutes his uniqueness to philosophers as well as biologists.

Unprotected by claws, sharp teeth, thick hide, fleetness of foot or sheer strength, man has to think his way out of tight places. Language has been our chief weapon for survival. In applying these generalities to the specifics of the classroom, Edgar Dale in his new book *Techniques of Teaching Vocabulary* says:

When you organize and provide a vocabulary development program you are changing the lives of students. Vocabulary growth is not at the periphery of our lives; it is central, focal. It can lead the student forward to broader experiences, which in turn generate more new experiences in logarithmic fashion.

Learning a new word carries within itself an explosive effect. We might visualize such new words as seeking further applications, nagging us to look further, study deeper. For example, when you learned the word serendipity (the faculty of making happy and unexpected discoveries by accident) did you then become aware of serendipities in your own life and in other people's lives? Did you become serendipity-sensitive? Perhaps you first became conscious of the word bursitis through having had it. Soon you discovered other people who had it and you commiserated with them on the painfulness that accompanied it.

Learning new words is a dynamic process that involves getting compound interest. New words in one's repertoire of responses are incremental, intrusive, propulsive, apparently pushing the possessor on to search for new applications. When our words change, we change.

That a student's vocabulary level is a good index of his mental ability has been a generally accepted fact

In addition, vocabulary tests have been found to correlate highly with tests of reading ability. Of course, one might ask whether we have a big vocabulary because we are born with high intelligence or whether we develop that intelligence by developing a big vocabulary. No neat answer is possible, but there is little doubt that rich experiences plus careful attention to naming will favorably influence the mental abilities of children.

Students need to realize that vocabulary is an index of the nature and quality of their lives. It reflects what they have studied, where they have been, the subtleties and refinements of their mind. A good mind means a good vocabulary and a good vocabulary means a good mind. Which comes first? Which causes the other? It is more accurate to say that they are interactive—each is an inseparable part of the background and abilities of the learner.

Any teacher who can see the extreme importance of language in the educational and mental development of students will willingly follow a systematic program of vocabulary development; not as an extra but as a basic to the teaching of his subject. He or she will see that vocabulary development is conceptual development. Each subject has key concepts explained in the vocabulary of that field and without knowing the language of that subject and the other content words, how can learning take place? A truly effective program requires teachers who are actively interested in or even excited about vocabulary development. The development of a glossary for the daily lesson is concrete evidence of the teacher's attitude toward helping the student cope with the language of that particular subject.

In the first year of the glossing program, not all the teachers wrote glossaries. It is doubtful if this can ever be achieved in any school. Enough teachers were supportive to prove the value of a truly organized method of helping students cope with grade level texts. Conflict of change will be encountered within any faculty, but even those who resisted undoubtedly did a better job of teaching since they could not be totally unaware of the problem.

We decided at the outset to use as little high interest level-low vocabulary material as possible. It does not take much thought to realize that such material is self-defeating for language development purposes. The lower the grade level the lower the vocabulary level. The use of such material may be entertaining, but it rarely builds knowledge of the English language. If a student becomes proficient in the language, he can read anything he wishes. Without that proficiency, he is doomed to a life of illiteracy. Today it is possible to use low vocabulary material from grades one through twelve, and if this course is followed consistently, we are only withholding the means of developing proficiency in the language.

For the testing program of the Tolleson Six School Reading Project, we decided to test five times during the year using Gates-MacGinitie series E M 1, 2, 3,. This intensive testing program was carried out on the high school level only. Gates-MacGinitie was chosen for its ease in administering and scoring, also it came highly recommended by the research department of a respected university. Its raw scores can be converted to grade levels which are meaningful to both students and faculty. Form M has separate answer sheets which enabled us to re-use the test booklets. Each teacher scored his or her own answer sheets using a previously prepared grid to facilitate the checking. No teacher had access to the test before the day of testing.

We were fully aware that testing five times was too many, as no reading test that we know of can test progress in reading accurately in such short periods of time. There were other reasons, however, for the five testing sessions. The concept of a schoolwide application of teacher-prepared glossaries is, as far as we know, unique. Since there was no precedent for us to turn to, we felt we needed the reinforcement and guidance of knowing the progress of the Project at frequent intervals. It is time-consuming to prepare glossaries and teachers need to know whether or not their efforts are bringing dividends. As mentioned before, some teachers who were reluctant to support the Project in September were cooperative after the results of the November test were made available to them. The average gain in reading comprehension during the first nine weeks was 1.7, or one grade seven months. This was for the entire freshman class, 50 percent of whom are bilingual. We wondered how much of the gain was due to "vacation lag" or the forgetting during the summer months. The gain during the next nine weeks was five months. Had the gain the first nine weeks been the same, we would have had one year's gain in eighteen weeks—still an acceptable figure.

We gave only two sections of the test, Vocabulary and Reading Comprehension. By dropping the Speed and Accuracy section, we could complete the other two sections in one 55-minute class period. We felt that speed was not an important factor in the Project program. For the statistics that are given in more detail in the last portion of this report, we used only the results of the reading comprehension section. The reasons for doing this were twofold. First, the time element involved—without secretarial help, a heavy load was thrown on the staff. Secondly, we needed to keep statistical information as uncomplicated as possible. We needed to keep the results of the test easily readable to a great number of very busy people, some of whom are not statisticians.

We found the time given for the students to take the two sections of the test adequate. The vocabulary section requires 15 minutes, the comprehension section 25 minutes.

I have mentioned that we used forms E M 1, 2, and 3, of the test. As an experiment, we used form F 1 M in the March testing. Form F is recommended for upper classmen, and while the students do not have to get as many right answers to score equally well as on the

F series, there seemed to be greater difficulty and we returned to the EM I for the May testing. The March testing was given unannounced. On the previous tests the students were aware of the schedule; on the March test they were not. Our thinking was that some students might not attend school to take the test so we withheld the information. The results were the opposite. Students who were absent that day protested, and students who were in attendance also protested that they should have been told so they could come mentally prepared. The incident reinforced our thinking that students should be kept fully informed of procedures and results in the Project. The dates of the May testing were announced well ahead of time.

As stated previously, every freshman student is told his test results as soon as possible after taking the test and told in a way he can fully understand. Each English teacher carefully explains the meaning of the results after each test. It was surprising how few students knew the meaning of, for example, 9.8 or 4.1. After each test the students were also given the results of the previous tests. These are given in a class situation but not announced to the other members of the class. After the first test students seemed reluctant to tell other students their scores, but after each succeeding test they openly shared them with their classmates.

The reasoning behind informing each student of his grade level was basic and simple. Who needs to know more than the student himself where he stands in reading comprehension?

We do not feel testing five times will be necessary another year. The decision between three and four testing sessions is still pending. Four sessions avoids the traditional semester and year-end tests which involve grades. We would like to avoid having students feel that the results of the reading tests are in any way reflected in report card grades. Administering four tests does increase the paper work for the teacher.

The cost of the Project is minimal. The coordinator's salary or consultant for the Tolleson Six School Reading Project was shared by all the schools involved and the State Department of Education. In a project of this type, a consultant who thoroughly understands the basic principles and philosophy can be very helpful, but the key figure in the over-all success is the school principal. The success of the Project is dependent upon his understanding that the basic cause of reading retardation is the difficultness of the English language, not ethnic origin or economic conditions. These, of course, can be contributing factors but only to the extent that they affect the students' proficiency in the English language.

Teachers traditionally look to a principal for leadership and guidance. A consultant is just that, a consultant, and can only identify the problems and suggest solutions, nothing more. It is at this point that a principal becomes all important. If he can work with the consultant and establish a condition of mutual respect and cooperation, the teachers react accordingly. Teachers are a sincere, hard working group of people, but on any campus they need the encouraging leadership of a principal. If a consultant does not encounter this support, he or she will only engender confusion and dissention among the staff.

To carry out an all school project, however, even the principal needs the support of his superintendent and, indeed, the school board itself. They, too, need to fully understand the nature of the project and in turn be kept fully informed of its progress. While it is the principal's prerogative to deal directly with the teachers and encourage and develop their participation, it is equally important that he knows he has the support of higher echelons.

In the final analysis, however, the success of the Project devolves upon the teacher and what takes place in the classroom. For this reason, the principal must encourage and lead rather than demand and require. A glossary for the day's lesson in the hands of a competent, knowledgeable teacher does far more than build reading comprehension. It, in a subtle way, identifies the antagonist as the English language and by extension identifies the teacher as a confederate in the struggle to cope with a difficult adversary. A principal who can lead teachers to see this will gain their willing cooperation.

To initiate a program of this type, a week's workshop can be extremely helpful. We found that teachers who attended the workshop for the Tolleson Six School Reading Project and came to fully understand the underlying philosophy were the ones who were mainly responsible for its initial success. A workshop provides teachers with the time to prepare glossaries before the rush of the year's activities begins. This is important, as at first teachers tend to be slow in choosing the item to include in a glossary and in formulating definitions for them. But as time progresses, texts can be glossed more and more rapidly. Teachers come to know, too, that there is no such thing as a perfect glossary. When the lesson is taught, he or she will realize that some items were included that were not necessary and some omitted that should have been included. The greatest single cost in addition to the coordinator's salary was the outlay for mimeograph paper. On the high school level a normal year's supply was used during the first nine weeks.

The administration of the Tolleson Six School Reading Project worked closely with Dr. W. P. Shofstall, Dr. James Hartgraves, and others in the Arizona State Department of Education. Dr. Bruce Wainwright, Evaluation Specialist, assisted in developing questionnaires for principals, teachers, and students. Copies of these are included in this report. These questionnaires were developed to give in-depth evaluation of the entire program. All the forms were completed in May and sent to the State Department of Education along with copies of the results of the testing program.

Certain conclusions became apparent as the first year of this unique Project ended.

1. Probably the most important aspect of the year's study is psychological, as in helping students cope with the language of the textbooks we also improved their self-image.
2. The teachers felt that by the use of glossaries they had a bond with their students that was lacking in previous years.
3. As usual in any innovation, there is always a "conflict of change," but teachers who resisted the writing of glossaries did a better job of teaching from day to day.
4. The average gain in reading comprehension for the freshman class was 3.2.

(In the Standard of Measurement of Progress developed by ESEA Title I a gain of 1.5 or more is considered substantial improvement.)

A copy of the student questionnaire is included in the following material, along with the percentages of responses by students as indicated in a preliminary report.

June 11, 1973

REPORT TO THE BOARD OF TOLLESON UNION HIGH SCHOOL
ON THE
TOLLESON SIX SCHOOL READING PROJECT

1. Average freshman reading level - - - - September 1972 - - - 6th grade 2 months.
2. Average freshman reading level - - - - May 1973 - - - - - 9th grade 4 months.
3. In September, 54 of the 323 freshmen were reading on or above the 9th grade level.
4. In May, 138 more freshmen were reading on the 9th grade level.
5. An additional 38 freshmen were reading on the 8th grade level.

Of the 46 freshman students who dropped out during the school year:

- 18 - read on or below the 3rd grade level
- 10 - read on the 4th grade level
- 2 - read on the 5th grade level
- 7 - read on the 6th grade level
- 4 - read on the 7th grade level
- 2 - read on the 8th grade level
- 1 - read on the 9th grade level
- 2 - read on the 12th grade level

In September, 123 freshmen read on the 3rd or 4th grade level.

In May, 18 freshmen read on the 3rd or 4th grade level.

Respectfully submitted,

Grace A. Blossom

(There is a slight variation between our beginning and ending grade level results and those of the State Department of Education. In ours, all beginning test results were used as well as all ending test results. The State Department of Education used only those students who had both a September and a May test result. As a result, ours included the scores of the 46 drop-outs while the State Department's did not.

STUDENT QUESTIONNAIRE

PERCENTAGE
OF
TOTAL

- | | | |
|----|---|------|
| 1. | Glossing is: | |
| | A. Explaining the general meaning of a reading assignment | |
| | B. Explaining the meaning of some difficult words | 84.2 |
| | C. Outlining the main topics of a reading assignment | |
| | D. I don't know | |
| 2. | How many of your teachers provide you with glossaries? | |
| | A. All of them | 1.3 |
| | B. Most of them | 19.2 |
| | C. Some of them | 73.9 |
| | D. None of them | 3.4 |
| 3. | Do you find the glossaries useful? | |
| | A. Very useful | 41.0 |
| | B. Of some help | 53.4 |
| | C. Not useful | 3.8 |
| | D. No response | .4 |
| 4. | Have you improved your reading because of glossaries? | |
| | A. Yes | 47.0 |
| | B. I'm not sure | 42.7 |
| | C. No | 8.1 |
| | D. No response | 2.1 |
| 5. | Which of the following changed because of glossing? | |
| | I enjoy school more: YES, 28.6 NO, 60.3 NO RESPONSE, 11.1 | |
| | I feel more sure of myself: YES, 69.2 NO, 23.5 NO RESPONSE, 7.3 | |
| | I enjoy reading more: YES, 62.0 NO, 32.1 NO RESPONSE, 6.0 | |
| 6. | What languages are spoken in your home? | |
| | A. English only | |
| | B. English and Spanish | |
| | C. Spanish only | |
| | D. Other. Explain _____ | |
| 7. | How long have you lived in this school district? | |
| | A. All my life | |
| | B. Five or more years | |
| | C. Two to five years | |
| | D. Less than two years | |

NAME _____ SEX _____ AGE _____

TEACHER _____ GRADE _____ DATE _____

TEACHER _____ SUBJECT AREA _____

GRADE LEVEL _____ DATE _____

TEACHER QUESTIONNAIRE

1. How many glossaries do you use each week? (on the average)

- A. Five or more
- B. Three or four
- C. One or two
- D. None

2. Who prepares the glossaries?

- A. They're already prepared
- B. The teacher (myself)
- C. The students
- D. Other. Explain _____

3. Who should prepare the glossaries?

- A. They should be prepared already
- B. The teacher
- C. The students
- D. Other. Explain _____

4. Which of the following are helped by glossing?

The students self-concept	VERY MUCH _____	YES _____	NO _____
I enjoy teaching more	VERY MUCH _____	YES _____	NO _____
I am better prepared	VERY MUCH _____	YES _____	NO _____

5. How many hours have you spent in glossing workshops?

- A. 20 or more
- B. 10 – 20
- C. 5 – 9
- D. 1 – 4
- E. None

6. Do you feel that glossing has increased student interest in reading?

- A. Definitely
- B. Somewhat
- C. Slightly
- D. No

Teacher Questionnaire (continued)

7. Do you feel that the use of glossaries has increased your students' reading achievement in your subject area?
- A. Definitely
 - B. Somewhat
 - C. Slightly
 - D. No
8. Do you feel that glossaries are helpful to you as an instructional aid?
- A. Definitely
 - B. Somewhat
 - C. Slightly
 - D. No
9. With which subject area do you feel glossaries could be most beneficial? _____
- _____
10. At which grade level(s) do you feel that the use of glossaries should be introduced?
- _____
11. How do you generally gloss?
- A. Oral review of glossing
 - B. Write glossing on blackboard
 - C. Printed sheets distributed to students
 - D. Other. Explain:
- _____

PRINCIPAL QUESTIONNAIRE

1. How many of your teachers use glossaries?

TOTAL

TOTAL GLOSSING

Academic

Non-academic

2. How do you supervise the use of glossaries?

- | | | |
|---|-----------|----------|
| A. Discuss glossing in staff meetings | YES _____ | NO _____ |
| B. Have special meetings on glossing | YES _____ | NO _____ |
| C. Have individual conferences with each teacher | YES _____ | NO _____ |
| D. Keep records of the teachers' use of glossing | YES _____ | NO _____ |
| E. Have workshops for the teachers | YES _____ | NO _____ |
| F. Report to the teachers the effects of glossing | YES _____ | NO _____ |
| G. Other. Explain _____ | | |

3. Do you feel the glossing program is useful?

- A. Very useful
- B. Useful
- C. Not useful
- D. Detrimental

“MY SCHOOL DAYS’ EXPERIENCES”

by

***MRS. ROMANA GARCIA RAMOS**

I came from a family which was Spanish speaking. When I started school I had a language barrier, I couldn't speak the English language at all. At the time we had a few or no bilingual teachers nor teacher aides to help us communicate our thoughts to our teachers.

At the age of six I felt frustrated and scared, because of the fact I didn't have anyone at school that seemed to understand my problems. The only escape that I had was when I went home, I felt happy and secure with my family. I took my “reader” home and with the help of my older brothers and sisters I was able to cope with the reading problems. It seemed to me that at home I learned to do my school work. I got to the point where I began to get stomach pains because of my tension. I would begin to make excuses so I wouldn't have to attend school. Finally, I began to read better and understand the teacher. I started enjoying school more and more. I didn't have a math problem because my parents knew how to do it, and they would explain to me how to do the problems.

As the years went by my parents never lost interest in my school progress. They were concerned as to how I was doing. When I was twelve we lost our father, and my mother was left to bring us up in the right direction.

It was hard on me but I learned. When I graduated from the eighth grade I was in the top ten per cent of my graduation class. I had a \$25.00 scholarship awarded to me for my high school education (it wasn't much, but I had something to look for). I also graduated with distinction, was on the honor roll, had a perfect attendance, won a **READ AWARD** medal, and athletics award.

When I started high school, I was more confident with myself. I learned to be able to do a schedule of my classes. Whenever there was a difficult problem, I wasn't afraid to seek for advice, because I no longer felt scared. I knew the teachers were there to help us.

My major difficulty was being able to cope with the vocabulary that increased every year of my studies. I couldn't be asking the teachers for every new word that came up, so I would look up the words in the dictionary. I would also outline the chapters in the books. When I graduated from high school I was in the top 25 per cent. I had a perfect attendance two years. An outstanding Spanish award, and a \$25.00 check from a private club so I could continue my education. I had enjoyable high school days. I learned everything I could.

Later I went on to college, I studied for a year and quit. I am going now that I have the time. I also have applied for a grant or loan to continue my studies.

I believe that if teachers had come up with the idea that Mrs. Blossom came up with concerning glossaries, perhaps all the students that graduated before me and after would have been better prepared for this advancing world.

“My School Days’ Experiences” (continued)

I feel that students from this high school will now be better educated, if they put a little effort and interest on their part. Also, not forgetting that parents should also have interest in their children’s progress throughout the school year.

In closing I am very proud of our Country, that gives us a free education, and freedom of advancement. I’ve learned the hard way, but I feel it has done me good.

**MRS. ROMANA GARCIA RAMOS is employed as a teacher aide at Tolleson Union High School, Tolleson, Arizona. She is also a graduate of Tolleson Union High School. It was decided to include her narrative as it reflects the experience of so many bilingual students.*

Mitzi Schireman, Department Chairman, English
Tolleson Union High School
Tolleson, Arizona 85353

GUIDELINES FOR WRITING GLOSSARY MATERIAL

- I. **READ** the material to be glossed.
 - II. **MARK** words or phrases which will be difficult for the child of lowest ability in your class.
 - III. **LIST** the words and phrases and write a short simple definition or explanation.
Write only the definition for the word as it stands in the context of the story.
Keep the same type of word in the definition—that is, same tense, number, etc.
Occasionally write out pronunciation of foreign or very difficult words.
 - IV. **PREPARE** glossary for duplication.
Follow standard format giving your name, course title, etc.
Every student is to receive a copy of the glossary.
 - V. **PRESENT** the glossary to students.
Introduce the first glossary very carefully.
- | | | |
|-------------------------|-----------------|-----------------|
| KEEP IT SHORT!!! | Teacher – Class | 5 – 10 minutes |
| | Student Groups | 10 – 20 minutes |
| | Individual | 5 – 10 minutes |

REMEMBER, you are teaching reading comprehension, **NOT** spelling, sentence structure, or parts of speech.

John Wolfe, Department Chairman, Science
Tolleson Union High School
Tolleson, Arizona 85353

GLOSSARY for Modern Physical Science, Holt, 1966
Chapter 6 Wave Motion – continued:
Part B, Sound and Music

In this section you will read about something that you are all familiar with, music and musical instruments. You will find out why some make certain kinds of sounds and others make different kinds of sounds. You will find out how the different musical scales came about and why they are used throughout the world. You will read how certain sound waves can cancel out other sound waves in some cases and how they can combine to make louder sound in other cases; this is called interference and resonance as you shall see. What is noise compared to musical notes? When you finish this section you should know how to tell the difference. You are now studying real physics; go to it.

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1. displeasing to the ear – doesn't sound good to you
2. irregular pattern of vibrations – a whole set of vibrations in which there is no regular repeating pattern
3. complex – made up of many different parts
4. The distinction – the difference between them
5. electrical impulses – changing electrical currents
6. are displayed – are shown for you to see
7. waves differ in detail – have different shapes and sizes
8. pitch – drop abruptly – rapidly or suddenly drop to a lower tone
9. pitch how high or low a tone you hear (not how loud or soft a sound)
10. sound which a horn emits – the sound the horn makes

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11. sounding object – the object making a sound
12. object was stationary – object was not moving
13. relative motion between the observer and the source – how the observer is moving toward or away from the source; or the source moving toward or away from the observer
14. diameter – the longest distance across and through the wire
15. tension – how strongly something is pulled or stretched

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16. deep bass notes of the piano – the lowest notes on the piano
17. effectively shortening it – giving the effect of shortening it
18. frequency – is inversely proportional to its length – the frequency gets lower as the length gets longer
19. frequency – is directly proportional to the square root of its tension – frequency increases as the square root of the tension increases

Jack Maben, Teacher
Underdown Junior High

GLOSSARY, 6th Grade Science, TODAY'S BASIC SCIENCE

- P. 89 Permeable – gathers in lines of force
Off Balance – not working right
Interfere – bother
Gyrocompass – a compass not affected by lines of force
Steel Hull – outer wall of a ship made of steel
- P. 90 Non-permeable – will not gather in magnetic lines of force
Keeper – soft iron bar used to preserve a U or horseshoe magnet
Preserve – save
- P. 91 Danish scientist – a scientist from Denmark
Origin – beginning
Widespread interest – every one wanted to know
Lecturing – talking
Approached – came near
Incident – event, happening
Relationships – connections with
Insulation – a protective covering
Parallel to – even with
- P. 92 Conclude – reason, decide
Surrounding – all around it
Pinhole – a hole the size of a pin
Perpendicular – upright, at right angles with
Reverse the connection – change the wires on the posts
- P. 93 Reversing – turning around
Dynamo – a generator of electricity
- P. 94 Alters – changes
Environment – surroundings

STUDY QUESTIONS

1. What does it mean when scientists say that a piece of iron is permeable to magnetism?
2. What is a Keeper and for what is it used?
3. Describe Oersted's experiment.
4. Under what conditions will a copper wire show some characteristics of magnetism?
5. What is the hypothesis which accounts for the earth's magnetism?
6. What is a compass?

GLOSSARY

Bowmar Series

Custom Cars

Page 3 Custom Car – car made the way an individual wants it

Page 4 Man Made – a car made by a man and not in a factory

Page 5 Customize – change a car into something new

Page 6 Restored – made an old car look like new

Page 7 Original – looks like no other car

Page 8 Drag Race – a speed race over 1/4 mile track

Page 10 Brass – a mixture of metals which is soft

Chrome – shiny, rust-proof covering for steel parts

Radiator – the part of the engine through which cooling water is pumped

Roadster – an open car popular in the 1930's

STATISTICAL DATA

TOLLESON READING PROJECT EVALUATION

INTRODUCTION

This report constitutes a statistical analysis of data gathered during the 1972-73 school year in the schools in Tolleson, Arizona. The data was gathered as one part of an evaluation of a reading project. The reading consultant in charge of the Project was Grace Blossom. An evaluation of the Project was designed and supervised by the Planning and Evaluation Office of the Arizona State Department of Education, Dr. William Raymond, Director. Data in this report was collected as a result of this State-sponsored evaluation.

The basic effort in the Tolleson Project was to have the teachers provide students with glossaries prior to any reading assignment. This process is called "glossing." Although glossing was carried out in all grades, it was emphasized in the ninth grade in response to a challenge by the State Department of Education to have each student read at a minimum of the ninth grade level. Details about the Project are available in a report prepared by the Tolleson District.

There are several conditions which should be mentioned. This is the first year of the Project, and because of this there can be no comparison of this data with comparative data from previous years. Also, there are no control schools to provide base data. These limitations are sufficient that one should exercise caution when interpreting this report.

DESIGN

A total of 830 ninth grade students was included in the study. Each student and teacher who participated in the study completed a questionnaire specifically designed for the study. (Both questionnaires are included in the Tolleson report.) As a measure of reading achievement, the Gates-McGinitie Test was administered in September and again in May.

STUDENT GAIN SCORES

TABLE 1

MEAN NINTH GRADE TEST SCORES

	Female	Male	Total
Pre-Test	6.82	7.13	6.98
Post-Test	9.36	9.81	9.62
Gain Score	2.54	2.69	2.64

As indicated in Table 1, there was a gain of 2.64 grade levels during the eight months between testing. The mean gain score for females is lower than for males.

TABLE 2
MEAN GAIN SCORES BY LANGUAGE SPOKEN IN HOME

Language	Female	Male
English Only	2.51	2.99
English and Spanish	2.51	2.37
Spanish Only	1.50	1.47
Other	4.33	2.77

Table 2 depicts the reading gain scores of students with different language situations in the home. The highest gain occurred with male students from homes that speak English only. There was also considerable gain for students who have both English and Spanish spoken in the home. There was significant gain, however, for all students.

TABLE 3
STUDENT ATTITUDE AND GAIN SCORE

Do you feel glossaries are helpful?	Female	Male	Total
Very	2.36	2.02	2.73
Some	2.78	3.00	2.99
No	1.77	3.48	2.53
Detrimental	—	—	2.70

Table 3 indicates that there is no strong relationship between students' attitude towards glossing and gain scores. Whether the student has a high or low attitude, they still show significant gains.

TEACHER IMPRESSIONS OF GLOSSING

Tables 5-10 provide the answers the teachers supplied to some of the informative type items in the teacher questionnaire.

TEACHER IMPRESSIONS OF BENEFITS OF GLOSSING

Table 5

**Increased Student Interest
in Reading?**

Definitely	31.9%
Somewhat	34.0%
Slightly	14.9%
No	10.6%
No Response	8.5%

Table 6

**Increased Student Reading
Achievement?**

Definitely	44.7%
Somewhat	21.3%
Slightly	6.4%
No	17.0%
No Response	10.6%

Table 7

**Does Glossing Help Student
Self-Concept?**

Very Much	36.2%
Yes	51.1%
No	2.1%
No Response	10.6%

Table 8

**Does Glossing Help You Enjoy
Teaching More?**

Very Much	17.0%
Yes	34.0%
No	14.9%
No Response	34.0%

Table 9

**Does Glossing Help You
Prepare Better?**

Very Much	34.0%
Yes	36.2%
No	6.4%
No Response	23.4%

Table 10

**Do You Feel That Glossaries
Are Helpful To You As An
Instructional Aid?**

Definitely	59.6%
Somewhat	14.9%
Slightly	14.9%
No	8.5%
No Response	2.1%

The teachers (Tables 5 and 6) felt greater improvement took place in reading achievement than in reading interest. Table 10 indicates that teachers definitely felt glossaries were a useful instructional aid.

STUDENT IMPRESSIONS OF GLOSSING

Tables 11-14 provide student responses to information type items in the student questionnaire.

STUDENT FEELINGS ABOUT GLOSSING

Table 11

What is Glossing?

Girls	86.1%
Boys	82.4%
Total	84.2%

Table 12

Have You Improved Your Reading Because of Glossaries?

	Female	Male
Yes	57.4%	38.4%
Not Sure	36.1%	48.0%
No	4.6%	11.2%
No Response	1.9%	2.4%

Table 13

Do You Find Glossaries Useful?

	Female	Male
Very Useful	48.1%	35.2%
Of Some Help	47.2%	58.4%
Not Useful	2.8%	4.8%
Detrimental	0	.8%

Table 14

What Has Changed Because of Glossing?*

	Female	Male
Enjoy School More	1.84	1.81
More Sense of Self	1.40	1.37
Enjoy Reading More	1.37	1.50

*The lower the number, the higher the rating (1.0 = Yes, 2.0 = No).

About eight in ten students knew what an accurate definition of glossing is. Approximately one-half of the secondary students felt their reading had improved because of glossing, less than 10 percent said it had not. Less than 1 in 20 students said glossing was not useful to them. These tables present evidence that there was good teacher and student acceptance of glossing. Table 14 provides comparison of the advantages glossing offers them. The data suggests that the benefits of glossing were improved self-confidence and enjoyment of reading.

SUMMARY

The effects of this Project in terms of student gain scores seem to be highly satisfactory, and both students and teachers expose favorable attitudes towards glossing.