Making Words:
Examing the Impact of the Teaching Strategy on
Adolescent Literacy Skills

PRESENTED BY
Nathan Traller

In partial fulfillment for the M.A.T. /CTL
At Pacific University

June 16, 2004
Acknowledgments

To Mom and Dad who always supported me in my learning and had faith in my abilities.

To Dr. Anita McClain who taught me a wealth about literacy, I truly wish I had more classes to share.

To Dr. Jackie Waggoner for being the standard bearer for quality research and giving so freely of her time.

To Vicki, my loving wife, who made many sacrifices so that this could happen.

Without you, I could not have done this.

To my daughters, this is for you – now let’s play!
ABSTRACT

The intent of the study is to examine the impact of the Making Words teaching strategy on the literacy skills of adolescent learners. Previous studies show positive impact at the primary level. This study examines students’ responses to Making Words by asking four questions:

- Is there transferable benefit seen in spelling skills?
- Is phonemic awareness improved?
- Are reading word attack skills improved?
- Is there benefit seen in overall reading ability?

Data have been collected through a triangulation of three methods: pretests and posttests in specific skill areas, a student confidence survey, and teacher observation of students engaged in spelling attempts within the context of authentic writing. These data suggest that students do make improvements in overall spelling, phonemic awareness, word attack skills, and overall reading. The largest gains were seen in the areas of word attack and phonemic awareness. Due to the small sample size and lack of control, since this was not the sole method of literacy instruction, generalizability of these findings is limited. It does seem to provide encouragement that this strategy has valuable usage with older learners.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGEMENTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>iii</td>
</tr>
</tbody>
</table>

## I. SECTION I – CONTEXT

- Introduction ........................................... 1
- Purpose of the Study ............................. 2
- Definition of Terms ............................... 2
- Review of Literature .............................. 3
- Methodology ........................................... 8
- Rationale for A Qualitative Design .......... 8
- Site and Participant Selection ............... 8
- The Role of the Researcher .................... 9
- Data Collection and Analysis Procedures .. 10
- Delimitations ....................................... 10
- Limitations ......................................... 11
- Summary .............................................. 11

## II. SECTION II - DATA

- Test Results .......................................... 12
- Survey Results ....................................... 17
- Observation .......................................... 18
III. SECTION III - ANALYSIS AND INTERPRETATION

Introduction 20
Spelling 20
Phonemic Awareness 21
Word Attack Skills 22
Reading Ability 23

IV. SECTION IV - REFLECTION 25

V. REFERENCES 26

VI. APPENDIXES 29

Word lists- Sample Lesson 29
Student Survey 30
Permission to Conduct Research 31
Jeff hears the spelling word given orally by the teacher, “building.” He writes down the initial sound “b” and then adds “dlgin.” He knows it is wrong. He recalls from sheer memory effort that these letters are in the word, but the order eludes him. Next to him, Sara writes down “bildng,” also misspelled. Yet, Sara demonstrates a much better phonetic understanding. It may come as no surprise that Jeff also struggles with reading.

Phonemic awareness is an ability to distinguish the individual sounds present in words. When combined with an understanding of letter sounds, it provides the basis for decoding words. Students with a weak grasp of phonemic awareness, such as Jeff, will struggle in their reading (Mann, 1993). The spelling test scenario was deliberate. There has long been a connection made between spelling development and reading development (Ehri, 2000). In fact, spelling test scores have a very high correlation to reading scores (Morris, 1984).

Making Words is an instructional strategy that attempts to develop letter sound awareness by having students build words letter by letter as guided by the teacher (Cunningham, 1992). Students have a limited selection of letter tiles from which to choose and must work to determine the correct letter and order to place them in. A key feature is that common chunks of words, onsets and rimes, are practiced. I will illustrate the strategy in more detail later in this paper.

While studies supporting the foundations of this strategy are numerous, discussions of the strategy’s efficacy in improving literacy achievement are few. My interest lies specifically with struggling adolescent readers. In my own classroom using
word making, anecdotal evidence has been positive. However, I would like to determine with greater clarity how effective the strategy is for my students. Is there lasting benefit in their phonemic awareness, spelling, word attack, and overall reading skills? This paper examines these questions within the context of a middle school special education classroom. My motivation in conducting this research is to maximize instructional impact for the students.

The Purpose of this Study

The purpose of this study is to discover the impact of the Making Words strategy on the literacy skills of struggling adolescent readers. At this stage in the research, the strategy of building words from individual letters will be defined as Making Words. This paper will attempt to answer the following questions:

- Is there transferable benefit seen in spelling skills?
- Is phonemic awareness improved?
- Are reading word attack skills improved?
- Is there benefit seen in overall reading ability?

Definition of Terms

The following terms and their definitions will be used throughout this paper:

*Making Words*, the key strategy being discussed, is a teacher directed activity in which students work with a selection of letter tiles to form words at teacher prompting. The sequence of the words formed is deliberately from simple to complex (the final challenge word utilizes all the letters) and stresses common onsets and rimes. For example, students may be directed to form the word “ice,” then to add a letter to make it “nice,” then
“notice,” perhaps eventually forming the word “constitution.” Along the way, words stressing vowel combinations such as “ou” may have been practiced. By deliberately selecting the words that are made, a teacher can systematically introduce and review key phonics elements. Sorting the words for patterns after creating them, can be an important part of the activity. For this study, words suggested in Patricia Cunningham’s *Big Words for Big Kids* book will be used.

*Phonemic awareness* will be defined as a student’s ability to segment and order sounds within a word.

*Reading accuracy* shall be defined as the number of correct words read in a given passage.

*Word attack skills* refer to a student’s ability to phonetically decode a list of words, possibly nonsense words.

*Onset* refers to the initial sound cluster in a word, such as "b" in (b)oat.

*Rime* refers to the final sound cluster in a word, such as "oat" in b(oat).

*Review of Literature*

In order to understand the foundations for the Making Words strategy, it is helpful to examine the body of research that underpins its key assumptions. This review will examine the areas of: the relation of phonemic awareness to literacy, the importance of patterns within words, and the connection between spelling and reading. Finally, the ongoing application of the Making Words instructional strategy and its related forms will be explored.
Phonemic awareness and its role in literacy has been the subject of extensive research. This skill may be the, “most important core and causal factor separating normal and disabled readers” (Adams, 1990, p. 305). This relationship was outlined in a study by Mann (1993), in which 100 kindergarteners were given tests on phonemic awareness, phoneme segmentation, and inventive spelling. Some of the tasks entailed were: counting all the individual sounds within a word, determining which word was different from a group of like sounding words, and using inventive spelling to represent an unknown word. One year later the students were given a standardized reading test. Scores on each of the phonemic awareness tests predicted between 30% and 40% of the variance in reading ability among the first graders. The students were also given a test of visual-motor abilities prior to the research, but this was a less stable predictor.

Evidence that phonemic awareness is strongly related to success in reading and spelling is present (Ball & Blachman, 1991; Treiman & Baron, 1983). In a review of the research, Stanovich goes as far as to say: “Most importantly [phonemic awareness tasks] are the best predictors of the ease of early reading acquisition – better than anything else we know of, including IQ” (Stanovich, 1994, p. 284). It may occur to the teacher of reading, that if phonemic awareness is such an important predictor, is it possibly a foundational skill that can be taught?

To this end, several studies have shown that preschool and kindergarten children exposed to programs designed to improve phonological awareness become better readers (Bradley & Bryant, 1985; Cunningham, 1990; Lundberg, Frost & Peterson, 1988). To assist teachers in assessing phonemic awareness, Yopp has introduced the Yopp-Singer
Test of Phoneme Segmentation which has proven to be valid and reliable tool (Yopp, 1995).

In recognition of the significant research findings, phonemic awareness has been included as one of five essential reading skills in Reading First, the federally funded program. (Armbruster, 2001) Making Words supports the development of phonemic awareness by engaging students in tasks such as: changing one sound in a word to create another, and listening carefully for the sounds of the word the teacher gives orally and then representing it sound by sound with individual letter tiles. Frequent teacher questions such as “What word would I have if I changed the “b,” to a “t” (in battle)?” are very similar to activities designed to promote phonemic awareness. Drawing attention to patterns within words is related to the second area of research, the importance of word patterns.

When it comes to decoding words, “students have a natural tendency to seek out pronounceable word parts” (Gunning, 1995. p.484). In his study analyzing readings by 7-year-olds, the strategy that was used most commonly was to say the beginning consonant and then the whole word (buh-boat). Gunning suggests that students are dividing words into their onset (initial consonant or cluster) and its rime (vowel or vowel + consonant element). For example, -oat, -ime, -old, -oil, are all common rimes. He found very few instances of students decoding each word letter by letter (Gunning, 1988). It was clear that chunks of words were significant in the reading process. Gibson (1985) found through a series of experiments, that both children and adults had a tendency to use letter clusters to decode words, rather than single letters.
The application of this tendency can lend itself to specific instructional practices. The analogy strategy, where students substitute a known word such as rat, to help them decode a new word such as mat, has been shown effective by numerous studies (Ehri & Robbins, 1992; Gaskins, Gaskins, & Gaskins, 1991; Goswami & Mead, 1992). A study examining the benefit of providing prereading kindergarteners instruction in the rime analogy strategy showed clear success in the student’s ability to read rime analogy test words (Walton & Walton, 2002).

In an application with older readers, Englert (1985) conducted a study that involved teaching this analogy strategy as a method for spelling unfamiliar words. A group of 22 mildly handicapped students were given instruction in highly generizable word patterns and practice in applying these core word patterns to new words. The results showed a strong positive effect in spelling new words for the group that received the analogy training. The control group was taught spelling in a traditional fashion. They increased their spelling but were much less able to transfer orthographic knowledge to new words. Englert felt that a key component for the experimental group was frequent activities requiring the students to spell new words based on learned ones.

This is significant when examining the Making Words strategy. Within the strategy, common letter clusters are accentuated, as students create a list of words closely related by changing a single letter or two (ice, rice, nice, price, notice). A culminating activity of Making Words involves asking students to create new words that are similar to the patterns learned. For example, after building the word: motion, a student might be asked to spell lotion or potion. By now, it may have occurred to the reader that many of
the processes involved in building a word would also be applicable in reading, thus the following section on spelling and its relationship to literacy.

Cunningham (1992) states that “invented spelling and decoding are mirror-like processes that make use of the same store of phonological knowledge” (p. 226). This statement is borne out in the research of Gill (1989) and Morris and Perney (1984) who discovered that children’s inventive spelling (incorrect attempts to spell words while writing) in kindergarten to be a strong predictor of reading ability by the end of first grade. Zutell and Fresch (1991) expanded their study to examine a longitudinal study of third through fifth graders, and again found a very high correlation between spelling and reading performance.

Not just a predictor, engaging in inventive spelling has been seen as actually benefiting reading decoding (Clay, 1991). One problem of inventive spelling is the possibility that its indirectness leaves behind students identified with a learning disability who require more explicit instruction to learn the rules. In Reading Recovery, a widespread reading intervention, teachers have students build words with a subset of magnetic letters, reducing and focusing the task of inventive spelling. Making Words similarly limits the letters that students have to build from, enhancing and making explicit letter relationships.

With Making Words’ sound foundation of working on phonemic awareness, exploiting word patterns, and enhancing the benefits of inventive spelling practice it presents itself as a key avenue for enhancing literacy. How has it been applied in classrooms thus far? For the most part, Making Words has been utilized as one component of multi-method reading instruction (Cunningham, 1992). As a spelling and
decoding activity, it is by no means a full literacy program. It can, however, be an effective piece. In a case study on the application to a first grade classroom, Aiken (2002) discovered that the students were enthusiastic about the activity. The teacher who implemented it found it to be a worthwhile component of her curriculum. One important point that emerged was the value of having students read the words they have created to strengthen the decoding connection.

As the strategy has primarily been in use within lower elementary classrooms, the question remains: Can the strategy be effective when used with older readers who may developmentally be at a similar stage in their literacy? This study endeavors to answer that question by specifically describing the strategy’s impact on phonemic awareness, spelling, word attack, and overall reading skills.

Methodology

Rationale for a Qualitative Design

According to Creswell (2003), there are several key characteristics that define qualitative research. For example, it is conducted in a natural setting. The methods for data collection are multiple and humanistic, often employing feedback from the participants themselves. Additionally, this research is fundamentally interpretive; the data are analyzed through the researcher's personal lens to draw conclusions and offer further questions.

This study shares the characteristics listed above. While some elements of quantitative data collection are present through the use of pretest and posttest results, the primary aim is to examine and describe in specific terms the impact of a specific teaching
strategy on a small group of students. Causality will not be established. Instead, multiple sources, including the student's themselves will be utilized to describe the experience.

Site and Participants Selection

This study takes place in a suburban middle school located in the Pacific Northwest. The socio-economic profile of the school as described by participation in free or reduced lunch is as follows: 28% participating in free or reduced lunch. The language arts classroom examined is composed of students receiving pull-out Special Education services due to a variety of learning disabilities. Their chronological grades range from sixth to seventh grade, with functional reading levels ranging from 2.0 GE (grade equivalent) to 4.0GE. There is a 3:1 male to female ratio. By ethnicity, the classroom is roughly 35% Hispanic, 15% African-American, and 50% European American.

Role of the Researcher

I have been a classroom teacher for the past eight years. The last four years have been in Special Education. I currently work in a middle school as a special education resource teacher. I am involved in providing reading and writing instruction for students with learning disabilities. The acquisition of literacy skills has long been a professional interest, stemming from my beginnings as a primary elementary teacher. As I have collected data within my own classroom and students, efforts have been made to provide triangulation of results (see below) to limit my own bias.

Permission to conduct my research was made according to Pacific University and local school district guidelines. The parental permission of each participant was obtained prior to conducting research. As is always the case in Special Education, confidentiality
was placed in the highest regard. No names or otherwise characteristically identifiable information has been included. As the teaching strategy and assessments are a natural part of the classroom and my own normal attempts to document progress as per each child’s Individualized Education Plan (I.E.P.), disruption of the participants’ environment has not been a factor.

**Data Collection and Analysis Procedures**

Data have been collected through a triangulation of three methods: pretest and posttests in specific skill areas, a student confidence survey, and teacher observation of students engaged in spelling attempts within the context of authentic writing. Students were given the following tests prior to instruction: Woodcock Johnson Test of Reading Mastery - Word Attack Subtest, Words Their Way Developmental Spelling Pretest, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) - Test of Phoneme Segmentation, and the computer-based STAR Reading diagnostic test. It should be noted that all of these tests are commonly conducted by Special Education teachers and provide much needed instructional information, regardless of this research's requirements.

The Making Words (MW) strategy was utilized for 10 consecutive weeks, involving approximately 20 minutes, twice weekly. One specific word list was worked on each session (see Appendix). Post instruction, the students were observed over a four day writing exercise for transference of spelling principles. The students were given the student survey to assess their own confidence in spelling. Finally, the posttests were conducted to determine improvement, if any, in specific skills.
**Delimitations**

This study confines itself to examining one language arts classroom composed of 12 Special Education students. The study is limited in length to one trimester or 14 weeks of school.

**Limitations**

Due to such a small, purposive sampling, the generalizability of the results will be decreased. The results are not generalizable to all areas of literacy instruction. In addition, the strategy being examined, Making Words, was not the sole literacy instruction method during the time period. It is the strategy most targeted to the areas being measured, but being a qualitative design, the findings of this research could be subject to other interpretations.

**Summary**

This study examines the impact of the Making Words strategy on the literacy skills of adolescent readers. While studies exist that support the foundational premises of this strategy, specific studies examining impact on phonemic awareness, word attack skills, spelling and reading accuracy have not been conducted with older readers. By examining these areas closely, this study provides insight into specific gains in the classroom.
SECTION II: DATA

Pretest and Posttest Results

In the interest of determining the impact of the Making Words instructional strategy across four subcategories, a series of pretests were given. To determine a student’s ability to decode an unknown word, the Word Attack subtest of the Woodcock-Johnson Test of Achievement –III was administered individually to each student. Students were asked to read a series of nonsense words while the proctor checked their pronunciation against standard English word patterns. After missing six in a row, testing ended. This process took roughly five minutes and students appeared to be giving a strong effort free from fatigue. After the treatment period, students were again tested. The graph in Figure 1.0 indicates each student’s raw score before and after. The average pretest score was 17.89, and the average posttest score was 21.78. The difference between the means was 3.9 which was statistically significant at the p<.05 level (p=.013).

Figure 1.0 Word Attack
To determine whether growth in spelling was impacted, a developmental spelling inventory was administered to the entire class. This consisted of twenty-five words that became progressively harder as there were five words representing each developmental level. Thus the first word was “bed” and the last word was “unanimous.” Student responses were scored with one point given for each completely correct word. After the treatment period, students were again given a form of the test. The students’ performance on the pretests and posttests can be seen in Figure 2.0. The pretest average was 11 and the posttest average was 12.3, statistically significant at p<.20 (p=.134).
In the interest of measuring any possible growth in phonemic awareness, students were given an individual test of phoneme segmentation (DIBELS) which required them to listen to a word read orally by the proctor and repeat with pauses all the separate sounds they heard. There were roughly 80 phonemes to be segmented and the entire process took about five minutes. An alternate form was administered after the treatment period in the same fashion. The results in Figure 3.0 represent the percentage of phonemes that were correctly segmented in the pretest and posttest for each student. The pretest average was 91.67% with the posttest at 96.67%. This was statistically significant (p < .001).

Figure 3.0 Phonemic Segmentation
To determine any impact on overall reading ability (ability to extract meaning from text) the computer based STAR Reader diagnostic program was utilized. In groups of three, students logged into classroom computers and completed a five – tenminute test. Students had to select a multiple-choice response to a cloze sentence, determining which word made sense in the blank. Students were encouraged to put forth their best effort. The computer program administers 25 questions adjusting dynamically to provide the greatest accuracy. The results of each student’s grade equivalent score for both the pretest and posttest can be viewed in Figure 4.0. The initial class average was at the 3.16 grade equivalent, with the posttest at 3.44 GE for a gain of 0.29. This was not statistically significant (p=.391).

Figure 4.0 Reading Ability
### Student Spelling Survey Results

The spelling survey (Appendix 2) was administered to the entire class as a means of gathering some basic attitudinal information about spelling and its usage. Participants were encouraged to answer honestly on their gut feelings toward spelling. All questions were read aloud together. Due to the written nature of the responses, some answers were quite brief and some indicated a misunderstanding of the question. In a qualitative sense, the survey provided a descriptive observation of the study group participants prior to embarking on the Making Words instruction. Unlike other data collection methods used in this study, a post survey was not conducted. The results below did provide the practitioner with some interesting feedback regarding affective motivation and some strategies in place for spelling unknown words.

### Results
Is spelling important? Why?

Yes. You need to learn how to spell. (3) Yes, because you learn more words.
Yes, because it’s good to know. Yes, if you try to write mail
Yes, because you need to know how to write.
Yes, because when you want to write a letter to your friend.

How do you feel about spelling? Do you like trying to figure out words?

I love to write so I try a lot harder. I like.
It’s OK. Sometimes. Yes.
Fine. OK. No.
Sometimes good. Yes.

When is it important to spell correctly?

Writing. To write a letter and for stories.
On a final draft. When you are writing to somebody.
In a letter. Final draft.
In a store. Yes.
All the time.

What do you do when you don’t know how to spell a word?

Think of the sounds, sound them out. Sound it out or ask someone.
Spell Check. I do Spell Check.
Ask the teacher. I spell it when I need to
I listen to the sounds. I try to write it down. I know a little bit.
I look it up. I am very independent so
I don’t ask people. Or I write it over and over until it looks right.
Observation of Writing Activity

The observation of students engaged in the writing process which is recorded below, was designed to provide qualitative observation of students actually needing to spell words in the context of an authentic task. The intent was to gather information on generalizability of spelling skills to unknown words or to see what behaviors may occur when students desired to write an unknown word. The students were observed during the beginning stages of a writing workshop.

Results of Observation

The special education class of 13 students was instructed to use the previous day’s pre-writing web to begin a draft of a survival adventure story. The class has been listening to Hatchet by Gary Paulsen being read aloud. Students were given their webs back and directed to “writing workshop” seats. After about four minutes of shuffling around all but one student was seated with paper and pencil. This student remarked “So – what are we doing?”

“We’re using our pre-writing web to write our survival story, remember your Web?” The student looked and was unable to find it. He was prompted to start his draft. After drumming his fingers, he began to write.

The teacher queries class “What should you do if you need a word you can’t spell?”

“Sound it out!” a female student shouted loudly in a sing-song fashion.

“Yes, Stretch the word out and write the sounds you hear,” the teacher clarifies.

At this point all students are writing fairly constantly for ten minutes. Their writing
amounts range from two sentences to two paragraphs. To this point, no one has mentioned spelling issues. Then a male student said “How do you spell nuclear?” The teacher gives him the first letters then stretches out the sounds in the word. The student is impatient with this, but moves on to his story.

A student blurs out, “I’m done. I’ve got seven sentences!” He approaches the teacher who praises his paragraph and instructs him to add two more sentences. He ends up with another paragraph. An examination of his paper includes these sentences “They lefed the airport it got relley quit. Mat Day was a military man, he was a jenerall.” Most spelling approximations seem to indicate an attempt to represent each sound with a letter, with the exception of “quit” for “quiet.”

Another student’s work shows about two thirds of a page outlining a plane crash on a desert island. Many misspelling are evident, but the story is largely readable. An examination of other drafts seems to indicate more misspellings than might be expected if students were treating the words like a spelling test. The teacher indicates that this is a rough draft and tomorrow the students will be using a computer to revise and lengthen their creations. Students head out to lunch hurriedly handing drafts to their teacher.
SECTION III - ANALYSIS AND INTERPRETATION

Introduction

I will be analyzing the data collected in this study in order to examine the impact of the Making words strategy on adolescent literacy skills. I will attempt to use evidence from the data to answer the following questions:

• Is there transferable benefit seen in spelling skills?
• Is phonemic awareness improved?
• Are reading word attack skills improved?
• Is there benefit seen in overall reading ability?

Spelling

I will begin by answering the first question, is there transferable benefit seen in spelling skills? When looking at the data, as displayed in Figure 1.0, it can be seen that seven of the nine students improved their spelling ability score as measured by the “Words Their Way” developmental spelling inventory. One student scored at the same level, and one student suffered a loss. The average number of correct words out of 25 was 11 on the pretest and 12.3 on the posttest resulting in an average gain of 1.3 points, statistically significant at $p<.20$ ($p=.134$). In removing the one student who scored lower on his posttest, the average gain becomes two points. Two students improved by four points, a gain that implies reaching a new developmental spelling level. For students with learning disabilities, these gains are encouraging.

Spelling as measured by all letters correct in a word (as in the tests above) sometimes fails to present the whole picture, especially among very poor spellers. An
examination of misspellings can also yield interesting information. In other words, how off are they? Several students showed clear improvement in their misspellings, for example, being off by only one letter when their previous attempts included letter sounds out of sequence. This type of improvement, while more difficult to quantify, can have great impact in allowing a student to benefit from a spell-checker on the computer.

The classroom observation of a writer’s workshop yielded some signs that students had more confidence in their ability to phonetically represent words without calling on the teacher. Spelling approximations appeared to contain less instances of letters out of sequence or apparently random. This is, of course different from correct standard spelling which is the aim, but perhaps shows a developmental move towards spelling independence with learners who previously had been teacher dependent in their writing attempts.

**Phonemic Awareness**

The question of phonemic awareness was key to this study, since it was closely linked by previous research (Stanovich, 1994) to the foundations of Making Words. In the phonemic segmentation test students were asked to divide words into their separate sounds (ie. cat becomes “cuh”… “aaa”… “tuh”). Normal readers are able to do this with ease at a very high rate such as 99% of the time. The DIBELS assessments are used in many Oregon schools at the primary level to gauge early literacy intervention needs.

The class average on the pretest was 91.67% of the phonemes successfully segmented. Several readers had significant difficulty with this type of task, missing one out of ten phonemes they attempted to segment. This is consistent with readers with a disability which is consistent with findings from Yopp (1995).
The average on the post test was 96.66%, representing a gain of 5 percentage points. This was an encouraging increase, in that it indicated that older readers could improve their phonemic awareness, a skill that is vital to many literacy tasks. This was statistically significant (p <.001). The teacher cuing that is a part of a Making Words lesson draws attention to phonemic tasks such as listening for the order of sounds or changing one letter to create a new word.

**Word Attack Skills**

Are reading word attack skills improved by the Making Words method? I will attempt to answer this through an interpretation of the data. Students were given the Woodcock Johnson Test of Achievement –III: Word Attack subtest to measure their ability to correctly decode a word that had never before been encountered (nonsense words). The class average raw score on this test was 17.9 (roughly equivalent to the number of correctly decoded words.) This represents an average word attack level of 3.6 GE. Post-test results indicated a class average of a raw score of 21.7. This represents an average word attack level of 5.1 GE. The raw score average gain was 3.9, a jump in students abilities to break down and correctly pronounce an unknown word, which was statistically significant at the p<.05 level. Seven out of the nine students showed gains, while one student showed no growth and another decreased a score point.

In real terms this means students were able to decode words with more syllables and more complex phonics patterns. Clay (1991) has linked the process of creating inventive spellings to improve decoding. This seems to be corroborated here. The nature of Making Words focuses attention on chunks of words and common rimes which probably accounts for some of the improvement that is noted here. This also supports the findings of

**Reading Ability**

The final question asked by this study was: Is there measurable improvement in overall reading? An interpretation of the data will answer this final question. For a measure of general reading ability, the STAR Reader diagnostic computer test was selected. This computer-based assessment is related to the Accelerated Reader program that is in use in the students’ school. It estimates overall reading ability through Cloze – style multiple-choice questions that require comprehension. The test adjusts to correct and incorrect responses to provide a more accurate gauge of a student's reading level. As the only test that was not individuallly administered, it is the only one that is difficult to assess for student effort. Students were encouraged to do their best and not guess randomly. The initial class average was at the 3.16 grade equivalent. Scores ranged widely from 1.8 GE to 5.1 GE.

Posttest results showed a class average of 3.44 GE, though the difference between the pretest and posttest means of the students was not statistically significant at the p<.05 level. In grade equivalent terms this means that students overall gained about three month’s worth of growth in the ten weeks. This is only slightly above normal progress, which is one month gain for one month of attendance. However it is important to remember that it is not uncommon for learners with disabilities to make only half as much growth as their peers. This particular test was perhaps the farthest removed from tasks encountered during the Making Words activity as it involved comprehension of a sentence or short passage. In addition, other forms of reading practice and instruction that
took place in the classroom may very well be responsible for these gains. All the same it was encouraging to note some progress in this area.

In conclusion, gains were noted in spelling, phonemic awareness, word attack skills and overall reading ability. Gains in phonemic awareness as measured by segmentation (statistically significant at $p < .001$) and word attack skills (statistically significant at the $p < .05$) demonstrated the most dramatic gains. This is probably due to the direct connection present with tasks integral to Making Words. Spelling showed an increase as well (statistically significant at $p < .20$), with perhaps a large unmeasured increase in the developmental improvement of spelling approximations. Reading ability (not statistically significant at $p = .391$), showed slight gains over normal progress, which are amplified when the learner type is considered (a student with a disability as compared to a student without a disability).
SECTION IV – REFLECTION

At the heart of this study lies the question of whether Making Words is an effective method for adolescent learners to improve their literacy skills. To this end, progress in four specific skill areas was carefully measured and described through observation. Gains seem to point toward a limited conclusion that this engaging activity does hold benefit for older learners, as well as the younger learners previous studies had documented (Aiken, 2002; Ball & Blachman, 1991). Perhaps one of the keys is student engagement. While many literacy strategies can see results if performed consistently, Making Words seems to be unique in its challenge aspect that seems to stimulate motivation. Few students are ever heard complaining about the activity. This is in huge contrast to other phonics drill methods, which adolescent struggling readers have grown to loathe.

Further study with a larger sample size, would certainly improve upon the rather limited generalizability of these results. In addition, a measure of spelling that can account for total word correctness or gradations of incorrect spelling approximations may better describe the impact of this strategy on spelling. Other interesting areas for study might include the effectiveness of the strategy on spelling improvement for learners who already have strong phonemic awareness and decoding skills.

As a practitioner, this study has begun to answer questions I have had concerning literacy progress in my own classroom. It has served as a necessary validation of teacher hunches and anecdotal evidence that pointed to Making Words as a positive technique for teaching word structure. It appears hopeful that this technique is one of the many ways teachers can improve the literacy skills of older struggling readers.
REFERENCES


APPENDIX I –SAMPLE MAKING WORDS LESSON

Letters: “a i i i c f g n n s t”

Words: act tan fan scan sign acting tanning fanning scanning significant

Make Words- Distribute the letters and tell students what words to make. After each word is made show the correct spelling. Make sure everyone has each word spelled correctly before doing the next word. Keep the lesson fast paced.

1. Take 3 letters and spell act. He put on a big act!
2. Use 3 letters to spell tan. He had a good tan when he came back from the beach.
3. Change a letter to spell fan. The fan helps us to stay cool.
4. Use 4 letters to spell scan. I am going to scan these pictures into my presentation.
5. Use 4 letters to spell sign. Sign your name here.
6. Use 6 letters to spell acting. She was acting very strange.
7. Use 7 letters to spell tanning. Have you ever been to a tanning salon?
8. Use 7 letters to spell fanning. All of the people were fanning themselves and hoping the air conditioner would come back on.
9. Use 8 letters to spell scanning. I am scanning in the pictures.
10. Use 11 letters to spell significant. The police thought it was very significant that the missing person had taken her jewelry and passport.
11. Now it's time for the secret word. Take a minute to see if you can figure it out. (After 1 minute, give clues if needed.) Add your letters to significant to spell the secret word. The opposite of significant is insignificant.

Sort: Display the words on cards in the order they were made, and have each word read aloud. Have the related words sorted. Talk with students about how the words are related, and have student make sentences that combine the related words.

Transfer: Have students use the related words to spell and make sentences for similar words: run/running plan/planning act/active/inactive

Lesson is adapted from:

CD-2420 Big Words for Big Kids (C) Carson-Dellosa
APPENDIX II –SPELLING SURVEY

Is spelling important? Why?

How do you feel about spelling? Do you like trying to figure out words?

When is it important to spell correctly?

What do you do when you don’t know how to spell a word?
June 7, 2004

Dear Parents,
This spring I will be conducting some action research as part of earning my Master in Teaching at Pacific University. Action research is when educators make careful observations and measurements of students in the classroom, with the goal of further improving learning.

I am excited to have the opportunity to measure the effectiveness of a learning activity we have been using, known as Making Words. Students have been improving their ability to both spell and read by using sets of letters to create increasingly complex words. I hope to measure each student’s current abilities in reading and spelling before and after a series of ten lessons.

While none of the activities or informal tests are outside what I would normally do within my classroom, I want to ensure that I have your permission to include your child’s data in this study. No personally identifiable information or names will be used.

Please indicate below if you would prefer your child to **not** participate and return this by 2/10/04, otherwise no reply is needed. Please feel free to contact me with further questions.

____ No, please do not use my child’s data

Parent Signature: ____________________________ Date: __________

Sincerely,

Nathan Traller – Resource Teacher