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TAG Teach Level 1 Certification Project
Using TAG to Teach Typing to a Student With Autism

This study attempted to evaluate the use of TAG teaching to decrease the acquisition time for typing words on a computer keyboard. Three sets of two words, each consisting of five letters, were to a 9 year old student with autism. One word in each pair was taught using TAG, while the other was not. The student learned the TAG words in an average of two fewer first time probes than the words taught without using TAG, and all of the words, both those taught with and without the use of TAG, were acquired in a significantly fewer number of first time probes than the calculated expectancy.

" TAG is an acronym for *Teaching with Acoustical Guidance*," (2003-2004 TAGteach International). When teaching using TAG, an acoustical marker is used to tell to the learner that his or her response was correct. Non-receipt of a TAG indicates to the student that he or she needs to attempt the behavior again.

Each TAG point is an individual portion of the entire desired behavior. A student receives a TAG for each TAGpoint he or she performs correctly. TAG points are achievable to the student, and allow the student to attain a series of small successes in the path to completing a larger, more complex skill. When using TAG, the student also receives no verbal correction (TAGteach International 2005).

Table 1
The three sets of words taught. Words taught with TAG marked by *

Set 1	Set 2	Set 3
Dad's Name*	Swing	Donut
Mom's Name	Tramp*	Pizza*

Method

Participant

The participant was a 9 year old boy with autism who attends school in an Applied Behavior Analysis/Verbal Behavior (ABA/VB) class. Prior to the experiment, the student could type all 26 letters of the alphabet when given the SD, " Type (letter)," and was able to type two words. These two words included his own first name, 7 letters in length, and his nickname, 4 letters in length. The student was also able to identify all 26 letters of the alphabet, in both capital and lower case, receptively and expressively.

At the time of the experiment, the instructor had been working with the student conducting ABA/VB therapy in his home 2-3 times per week for approximately 8 hours for a period of 21 months.

The student worked using a token reinforcer system, in which he chose from an array of photos of available reinforcers before beginning a work session. The student would receive 5 tokens, which he would then trade for his chosen reinforcer.

Setting and Materials

The setting was the student's home. The sessions took place in a basement room, in which the student's regular therapy sessions usually took place. The student and instructor sat at a small kitchen table. The setting was not controlled for noise, which included common household sounds such as a television and vacuuming occurring in other parts of the home. On the weekdays, the sessions were conducted after school between 3 and 5 pm., and on weekends the sessions were between 9:30 am and 12:30 pm. The teaching occurred during the student's reguarly scheduled therapy sessions.

Materials were brought to the setting before beginning the work session with the student. These included a standard english keyboard, the TAGger, the words (each was written on a seperate 3x5 card) a countdown timer, the student's token board, and tokens. Each letter of each word was approximately 1 ½ inches from the bottom of the card, so that the card could be set between the top row of letter keys and the number keys without this obstructing any of them from the student's view. All letters were written as capitals, approximately 1 inch high, and ½ inch in width, with ½ of space between letters. There were a total of 6 such cards.

Dependent Variable

The dependent variable was the number of independently typed letters per word. A letter was considered independently typed if the student began looking for, and touched the letter within 2 seconds of the SD for the first letter, and for subsequent letters, if the student located and touched the next letter in the sequence within 2 seconds of touching the previous letter. For each pair, the number of independently typed letters was measured before the intervention began. During the probe, the instructor put the word card at the top of the keyboard, and said, “type (word on card).” The first session for each pair was conducted without any teaching.

Procedure

The words were selected such that each pair was related by category. The second criteria selected was that in order for a word to be included, it must contain 5 letters. Third, the words in each pair had to have relevance to the student, and exist in his vocabulary. The TAG word for each pair was selected by assigning the word in each pair that was first in alphabetical order to heads, and the second to tails on a coin. A seperate coin toss was then conducted for each pair of words, such that the results for one pair did not affect the results of any of the other pairs. The word assigned to the side that landed up in each toss was then designated as the TAG word for that pair. It should also be noted that the student's father's name comes in the alphabet before the name of his mother.

Baseline. The first session for each pair was conducted without any teaching. The word was set at the top of the keyboard, and the student was given the SD, “type (word).” One probe session was conducted for each pair of words. During the probe session for all words, the student gave no response. Only one set of words was taught at a time, with both words in a pair being mastered before moving to the next pair of words. Only one session was run per day. Sessions were sometimes run on consecutive days, and at other times there were several days between sessions, with longest interval between sessions being six days. The total of 19 sessions occurred over a period of 5 weeks and 1 day.

Teaching Sessions Teaching occurred during work sessions which were 15-20 minutes in length. The student worked on previously acquired material, and other items being targeted in addition to the typing during the sessions. A word was presented to the student by placing it at the top of the keyboard, with the SD, “type (word).” For the TAG words, the student received a TAG for each letter typed correctly, and for the words taught without TAG, the student continued typing the next letter in the word with no response from instructor until he had typed all the letters. After typing all 5 letters, for both the TAG words and those taught without, the student received a token. If the student did not begin typing the word within 2 seconds of the SD, he was prompted by the instructor first pointing the first letter of the word on the card, then pointing to that letter on the keyboard. If the student took greater than 2 seconds between letters, and did not appear to be searching for the next letter (determined by eyes looking away from the keyboard, and not scanning it),the instructor used the same procedure of pointing to the next letter in the word on the card, then pointing to it on the keyboard. For the TAG words, the student still received a TAG for a letter that required prompting.

Criteria For Mastery As the student's typical criteria for mastery was 3 consecutive correct first time probes, a similar method was chosen. A word was considered mastered when the student typed all 5 letters independently during 3 consecutive first time probes.

Results

Calculated Expectancy. The expected number of first time probes necessary for the student to master a five letter word was based on the number of probes required for him to master typing his name. The student required 13 first time probes, counting only those probes conducted by the instructor, to type his own first name (7 letters) correctly on 3 consecutive probes. With the length of the words used in the study being 5, which is 71.4% of 7, the expected number of probes was 71.4% of that required to master the 7 letter word, or 9.3 first time probes. As a partial probe cannot be conducted, this was rounded to 10 first time probes.

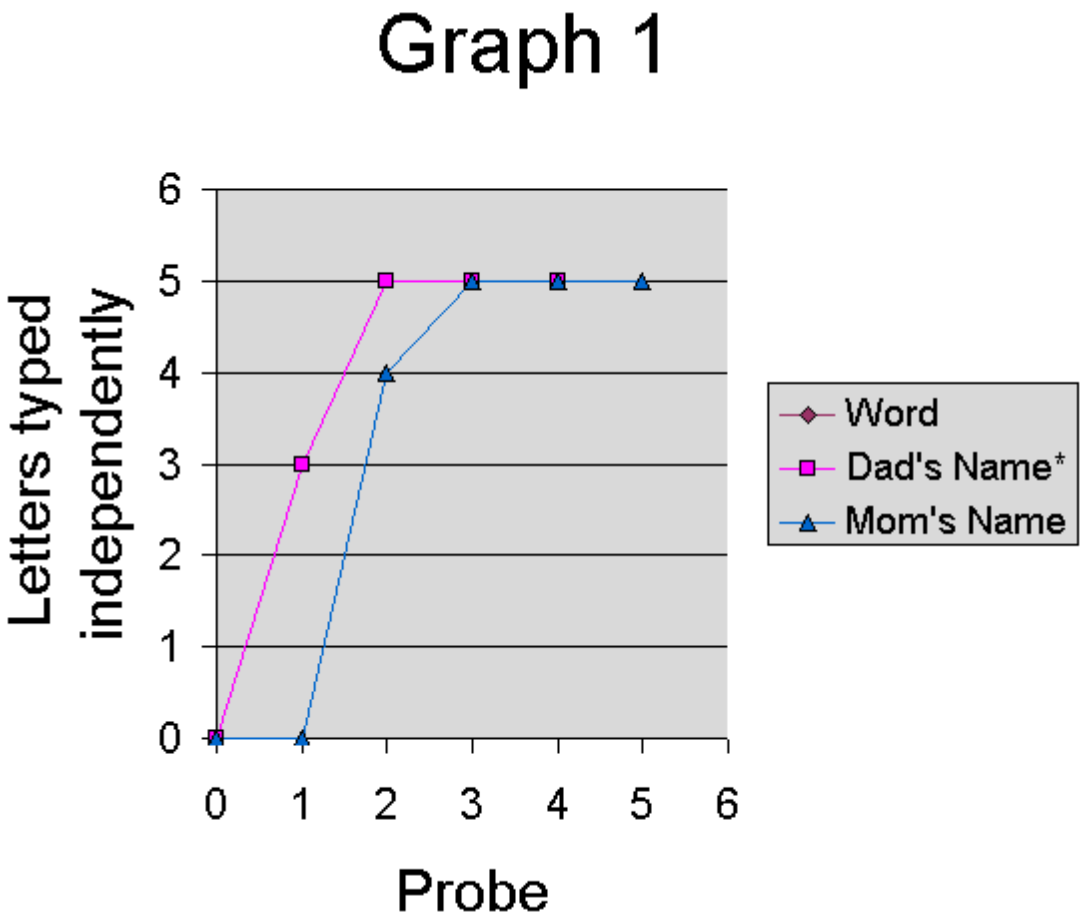
Set 1(see graph 1) During baseline, the student typed no letters in any of the 6 words. During the intervention for Set 1, the student typed 3 letters independently of the TAG word, and 0 letters of the word on which TAG was not used on the first probe. He continued on to type 5 letters of the TAG word during probe 2, and 4 letters on the non-TAG word. The student mastered the TAG word on the fourth probe, and the non-TAG word on the fifth probe.

Set 2 (see graph 2) For Set 2, the student also did not type any letters during the baseline probe. On Day 1 of teaching for this set, he typed all 5 letters of the TAG word, and mastered the word on the third probe. For the non-TAG word, the student typed 3 letters during probe 1, and 5 letters during both probes 2 and 3. However, during probe 4, the student typed only 3 letters.The student mastered this word on probe 7.

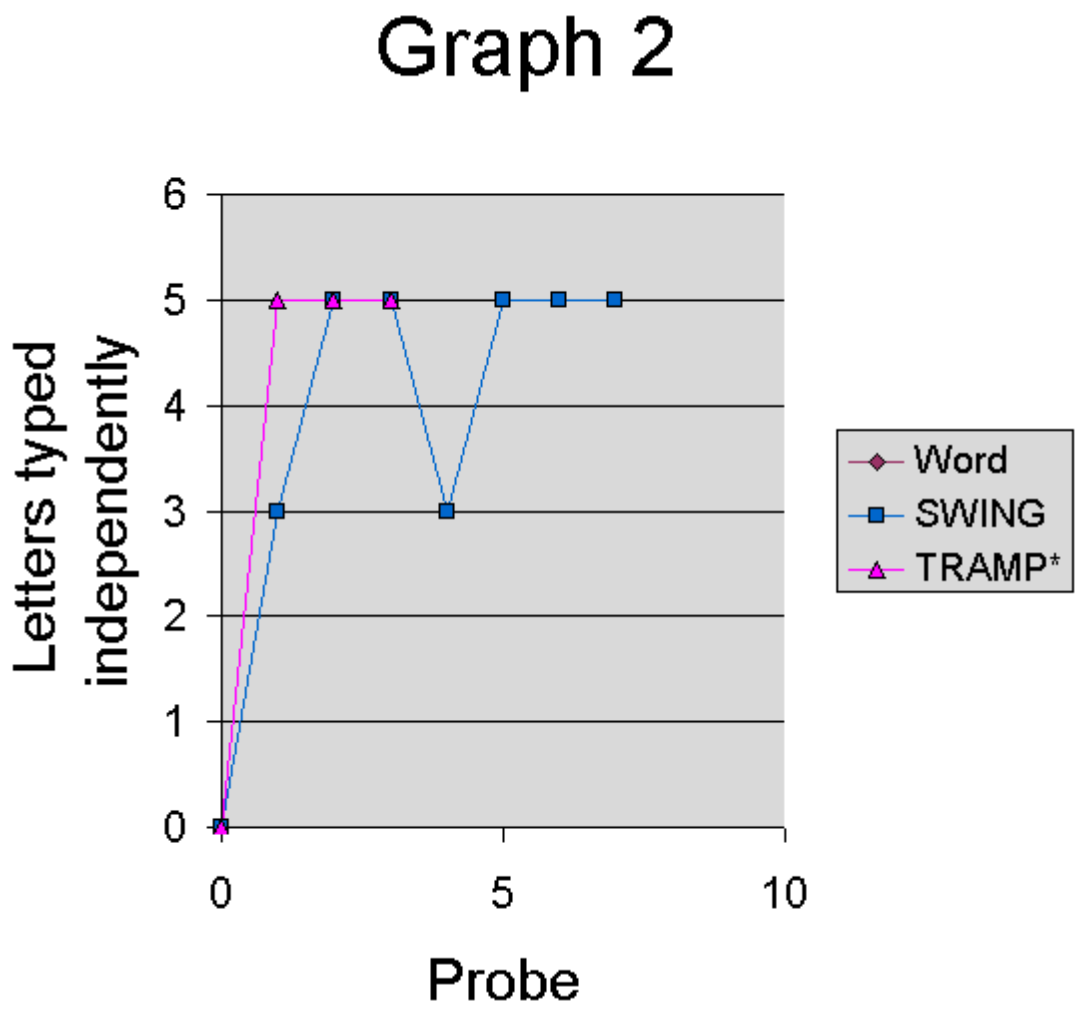
Set 3 (see graph 3) In Set 3, the student typed 0 letters for both words during the baseline probe. On Day 1 of teaching, he typed all 5 letters of the TAG word, and mastered the word on probe 3. The student typed 4 letters of the non-TAG word during the first day of teaching, and 5 letters during the next 3 probes, mastering the word on probe 4.
*For all graphs, probe 0 represents the initial baseline probe.

Overall, the student was able to master all 6 words in a total of 16 sessions. The average number of probes for mastery of the TAG words was 3.3, and the average number of probes for mastery of the non-TAG words was 5.3. For the TAG words, the average number of probes required was 25.3% , of the expected 13 probes, and the non-TAG words the average was 40.8% of the expected number of probes. The TAG words were learned in approximately 62.3% fewer probes than those words for which TAG was not used (see Word Acquisition Times graph).

Probe	0	1	2	3	4	5
Word						
Dad's Name*	0	3	5	5	5	
						5



Probe	0	1	2	3	4	5
Word						
SWING	0	3	5	5	3	5
TRAMP*	0	5	5	5		



Probe	0	1	2	3	4
Word					
DONUT	0	4	5	5	5
PIZZA*	0	5	5	5