Introduction
We have all heard the old joke of school being all about the three “R’s”, Reading ‘Ritin and ‘Rithmatik, but because of increasing class sizes and reported lack of instruction time, writing has been passed over for the more “important” subjects. The advent of computers and the increasing ease of word processing have given teachers the ultimate excuse, but most beginning composition is still being done by hand. Poor handwriting can have many adverse affects on other areas of a child’s life. It is presumably due to these secondary problems that the most common reason for referral to occupational therapy is handwriting problems (Case-Smith 2002). Clearly, more time needs to be spent on handwriting instruction but many teachers claim to not have enough time due to increasing budget cuts and a higher student/teacher ratio. The Handwriting Without Tears ® method, or HWT®, proposes to solve this dilemma by requiring only ten minutes a day to increase handwriting proficiency (Olsen, 2004). It has been adopted by the state board of education in 14 states (Olsen, 2004), but is this method efficacious?

Evidence-Based Practice Question
What is the efficacy of the Handwriting Without Tears® method of teaching children handwriting skills? The purpose of this project is to find out what evidence is available.

Criteria for Evidence Selection
Detailed papers pertaining to the HWT® method and its effectiveness were selected. As few were found, the criteria were widened to accept studies that addressed some of the major components of HWT® were included. Articles older than 1995 were excluded.

Evidence

<table>
<thead>
<tr>
<th>Reference</th>
<th>Study Design/Data Collection</th>
<th>Level of Evidence</th>
<th>Sample Size</th>
<th>Outcome/Intervention</th>
<th>Summary of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owens, L. L. (2004) Master’s Thesis. Virginia Commonwealth University</td>
<td>Randomized controlled trial</td>
<td>II</td>
<td>81</td>
<td>Two classes each control and treatment group. Treatment group received HWT® and control group received regular classroom instruction</td>
<td>Improvements were found in three of the nine hypotheses. Students improved most in the areas of size and spacing. Teachers were satisfied with HWT® effectiveness and usability and continued to use after study conclusion</td>
</tr>
</tbody>
</table>
**Evidence for components of the HWT® program**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Study Design/Data Collection</th>
<th>Level of Evidence</th>
<th>Sample Size</th>
<th>Outcome/Intervention</th>
<th>Summary of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graham, S., Weintraub, N., Berninger, V. W., (1998) The Journal of Educational Research</td>
<td>Cross-sectional study</td>
<td>III</td>
<td>600</td>
<td>All students gave three handwriting samples. Comparisons were made between handwriting style and other factors</td>
<td>Found a combination of manuscript and cursive to be equal or more legible to either alone. Mixed was also faster but majority used either manuscript or cursive.</td>
</tr>
<tr>
<td>Woodward, S., Swinth, Y., (2002) American Journal of Occupational Therapy</td>
<td>Cross-sectional study</td>
<td>III</td>
<td>198</td>
<td>Survey given to school-based OTs requesting information on use of multisensory modalities in handwriting therapy</td>
<td>130 different modalities reported with 92.1% of respondents using at least one in practice. Only 25 modalities are in the current literature.</td>
</tr>
<tr>
<td>Cornhill, H., Case-Smith, J., (1996) American Journal of Occupational Therapy</td>
<td>Cohort study</td>
<td>III</td>
<td>48</td>
<td>Handwriting identified as good or poor. Commonalities/differences identified in several sensorymotor areas</td>
<td>Eye-hand coordination, visuomotor integration, and in-hand manipulation correlated moderately or above to handwriting</td>
</tr>
</tbody>
</table>

Little evidence is available on the efficacy of the HWT® method as a whole, especially compared to other available programs such as the D’Nealian, Zaner-Bloser, and McDougal Littell.
Owens (2004) conducted a study looking at the effects of the HWT® method on the handwriting of students in inclusion classrooms. It was found that the HWT® method was effective in improving overall handwriting compared to those who received regular classroom instruction. Improvement was seen in the sub-categories of size and spacing as well as an overall improvement (Owens 2004).

Another study considered the effects of proprioceptive input combined with the HWT® method on handwriting of children with learning disabilities (Guy 2003). This study found that HWT® combined with proprioceptive input may be more effective than the HWT® program alone, but that HWT® was significantly effective over baseline levels either with or without (Guy 2003).

One of the major focuses of the HWT® method is on upright vs. slanted manuscript. “Slanted manuscript letters are no more successful than traditional manuscript letters in enhancing the transition to cursive writing or in improving the overall legibility of students’ manuscript writing” according to Graham, Weintraub, and Berninger (1998).

Another element of the HWT® method that makes it unique is that it employs very little use of repetition, part of why it takes only 10 minutes a day. Ste-Marie, Clark, Findlay, and Latimer (2004) found that “mere repetition of a letter is not sufficient for learning.” Contextual interference, a random structure, is more effective in handwriting retention and transfer performance in children than repetition, or blocked structure. This could be due to the fact that functional handwriting is a more random structure than the mere repetition of letters often found in handwriting training.

A third unique element of the HWT® method is the multi-sensory approach it uses, especially in the Readiness products for students not yet ready to start writing. The multisensory approach in Occupational Therapy is used by over 90% of school based OTs for handwriting remediation (Woodward, Swinth 2002). In fact, far more modalities are used than are in the literature. Some of the products in HWT® such as sing-alongs, magnetic stamp pads, wood pieces, chalk-boards, and putty mirror similar methods being employed by OTs in the schools. Cornhill and Case-Smith (1996) compared several sensory factors for children with poor and good handwriting and found that there was a moderate to high correlation in visuomotor integration, eye-hand coordination and in-hand manipulation with handwriting quality. This further reinforces the need for a multi-directional approach to handwriting, especially one tailored to the needs of the particular child.

Summary of Evidence

Some of the major HWT® components are supported and I have come across quite a bit of testimonial evidence citing HWT® as being the product that finally helped a particular child write effectively, but there is still not much conclusive evidence available to make a recommendation either way.

Implications for Consumers

As there is so little research on the efficacy of the program, it is difficult to tell if it will be a successful program for your child. However, there is a lot of testimonial evidence and as the workbooks are well under ten dollars, it may be an acceptable alternative to a program that is not currently working. If HWT® is selected for either
individual or classroom use, data should be collected to ensure the intended results are reached. This data could further our understanding of the efficacy and usefulness of the HWT® method.

**Implications for Practitioners**

The HWT® method is created by an occupational therapist and the underlying OT approaches and modalities are apparent, especially to those who have been using these techniques in the clinic for years. It could be an appropriate approach for individuals who are struggling with another handwriting method or if a parent inquires about/suggests it for his or her child.

**Implications for Researchers**

Current research suggests that the HWT® program is beneficial to children learning to write, but evidence is scarce. Suggestions for further research would be a comparative analysis of the HWT® method with another commonly used form of handwriting instruction, such as the D’Nealian, Zaner-Bloser or McDougal Littell.

**Recommendations for best practice**

The HWT® website itself states “There is no reason to change to Handwriting Without Tears if your child is doing well with the current curriculum.” If however, s/he is struggling, it may be a successful alternative. As it has been in use for about ten years and holds a strong and still growing support base, it could be argued that the approach will not likely be a detriment to the acquisition of good handwriting skills.

**Reference List**


