

## Orton-Gillingham

### **What claims does the company make / what does the programme target?**

The programme is aimed primarily at individuals with dyslexia, with claims on improving reading, spelling and writing difficulties. However, the approach has also been adapted for use with students who have difficulties with mathematics (e.g. dyscalculia). It is appropriate for all school-aged children as well as adults, though early intervention is recommended.

### **Evidence for efficacy:**

#### Litcher & Roberge (1979):

This article discusses the results of the High Risk Experimental Project, which involved comparing the reading-related achievement of primary school children at risk for reading problems following either Orton-Gillingham instruction ( $n = 20$ ) or standard school curriculum teaching ( $n = 20$ ). Students were taught the Orton-Gillingham or standard reading and language instruction 3 hours per day. The Metropolitan Achievement Test (word knowledge, word analysis, reading and total reading subtests) and the vocabulary and comprehension subtests of the Gates MacGinitie Reading Test were used to assess children's reading-related skills. Assessments were carried out at the end of each year over the course of three years.

$t$ -tests revealed that at the conclusion of each year, the Orton-Gillingham group were superior to the control group on all measures that were assessed.

Limitations: authors do not mention whether any pre-test measures were taken or controlled for, therefore it is unclear whether there were any differences in reading-related skills between the two groups prior to training. Many  $t$ -tests were used without any correction for multiple comparisons. No alternative treatment group. Initial selection of subjects was based on apparent difficulty in either the visual, auditory or motor area. This may have resulted in a rather heterogeneous group, in terms of the sensory difficulties that they are experiencing. A more specific selection criteria would have been better. The article itself notes that variables associated with the experimental teachers (e.g. bias about the student's performance as a result of being in the treatment group) could have affected the study's outcome.

#### Stoner (1991):

This study compared the performance of students who underwent standard basal reading instruction (control group) to that of students who participated in a classroom adaptation of the Orton-Gillingham instruction, known as Project Read. 130 first graders, 70 second graders and 83 third graders, all at risk for reading problems, took part in the study. Participants' total reading and subtest (word reading skills, word reading and reading comprehension) scores of the Stanford Achievement Tests reading sections were measured at the end of each school year.

MANOVA and ANOVA results revealed that the first graders in the Project Read group obtained greater scores on all measures relative to first graders in the control group. However, no significant differences were observed for second and third graders.

Additional analyses were conducted on a subtest of participants, controlling for the teacher variable (this analysis only included participants whose teachers taught in both the basal programme and Project Read). Results for first graders were consistent with the original results. However, with this analysis, second graders in the control group obtained greater scores on all measures relative to the Project Read second graders. The authors argue that the reduction in sample size

with second graders ( $n < 15$  for both groups) "limits interpretations of this data". No significant differences were observed with third grade students in this teacher- variable-controlled analysis.

Limitations: study does not mention whether participants were measured prior to receiving either basal reading or Orton-Gillingham-based reading instruction, therefore we do not know whether there were any differences in reading measures between the two groups. Results seem very mixed, especially when considering the data for the second graders. No alternative treatment group. Possibility that teacher bias may have affected results. No mention of the protocol used to implement Project Read or the basal reading instruction, i.e. how many hours per day, how many days per week.

Oakland, Black, Stanford, Nussbaum and Balise (1998):

In this study, the efficacy of teacher- and video-directed versions of the Orton-Gillingham-based Dyslexia Training Program (DTP) were compared to that of traditional reading instruction (control group). In total, 22 students received DTP (either teacher or video- directed) and 26 students were in the control group. DTP students underwent instruction for 1 hour/day, 5 days/ week for 10 months/year over the course of 2 years. The Reading Comprehension subtest of the Gates-MacGinitie Reading Test, the Word Recognition and Spelling subtests of the Wide Range Achievement Test-Revised and the monosyllabic and polysyllabic phonological transfer indices of the Decoding Skills Test were administered to all participants prior to study commencement, and at the end of Year 1 and Year 2.

Preliminary results revealed that there were no significant differences between the teacher-directed and video-directed DTP groups in any of the reading-related measures, therefore subsequent analyses combined these two groups to form a single DTP group. Comparing this combined DTP and control group, the DTP students made significant progress in reading comprehension over the 2 years, whereas the control group did not. For word recognition and polysyllabic phonological decoding, the DTP group initially had poorer scores than the control group, but outperformed them at the end of the 2 years; the control group showed little improvement. Both groups showed comparable improvement on monosyllabic phonological decoding over the 2 year period. No significant effects were observed for the spelling measure, with both groups showing little improvement over the 2 year period.

Limitations: no alternative treatment group: the standard reading instruction received by participants in the control group was what was generally provided in their own school. It is unclear whether schools that the control participants went to differed in the reading instruction provided. If so, it is possible that the control group may have been rather heterogeneous in terms of the reading instructions received. 15 DTP students and 10 control students were receiving supplementary reading assistance which was not controlled for. This may have confounded results.

Hook, Macaruso, and Jones (2001): [NB: this study has also been discussed in the FFW notes.]

Hook et al. compared the efficacy of the Fast ForWord (FFW) Language and Orton-Gillingham programmes on the language and reading abilities of 7 to 12 year olds with reading difficulties. Children in the FFW group ( $n = 11$ ) completed 5 of 7 FFW Language exercises for 100 mins overall, 5 days a week for 2 months, while children in the Orton-Gillingham (OG) group ( $n = 9$ ) received a one-to-one intervention method for one hour a day, 5 days a week for 5 months. Behavioural measures (Woodcock Reading Mastery Test – Revised Word Attack and Word Identification; Lindamood Auditory Conceptualisation Test for phonemic awareness) were collected prior to and following training.

Results indicated that while both groups improved on phonemic awareness following training, this improvement was significantly greater for the Orton-Gillingham group. Furthermore, the OG group made significant gains on the Word Attack measure, whereas the FFW group made no reading-related gains.

Limitations: participant recruitment differed for the OG and FFW groups. Children in the OG were enrolled in a summer school for children with reading difficulties, whereas the FFW participants were those who responded to flyers advertising the study. While the groups did not significantly differ on IQ, age, phonological awareness and reading abilities, it is possible that the summer school may have provided the OG children with a more structured and well-controlled environment than the FFW group, which may have contributed to the efficacy of the intervention. Long-term and additional measures were collected for the FFW group (e.g. speaking and syntax components of spoken language) but not for the Orton-Gillingham group. Consequently, we cannot comment on the effect of Orton-Gillingham instruction on these additional measures, or its long-term efficacy.

Joshi, Dahlgren and Boulware-Gooden (2002):

This study investigated the efficacy of the Orton-Gillingham-based Language Basics: Elementary programme ( $n = 24$ ) relative to the Houghton-Mifflin Basal Reading Programme (control group;  $n = 32$ ) in improving the reading-related skills of first grade students. Students were assessed on phonological awareness (Test of Phonological Awareness), decoding (Word Attack subtest of the Woodcock Reading Mastery Test-Revised) and reading comprehension (comprehension part of the Gates-MacGinitie Reading Test) prior to and following training.

Comparing gain scores from pre to post-test, results revealed that the Language Basics group showed significantly greater gains on all three measures relative to the control group. Additionally, the Language Basics group showed a significant increase on all measures from pre to post-test, but the control group children only made statistically significant gains on reading comprehension.

Limitations: initially 40 participants had been selected to participate in the Language Basics programme, but there was loss in the number of students due to children being moved out of the school district; gain scores have been criticised for having unknown reliability (Hyatt, 2007).

### **Evidence against efficacy:**

Chandler, Munday, Tunnell, and Windham (1993):

Chandler et al. compared the efficacy of an Orton-Gillingham-based Alphabetic Phonics programme to that of a traditional developmental reading course in 43 community college students. The traditional reading method focused on comprehension skills, reading efficacy, study skills and strategies for test-taking. The study design was quasi-experimental, with students participating in either programme over the course of one semester.

The study found that the group who underwent traditional reading instruction had significantly better reading performance (Nelson-Denny Reading Test) than students in the Orton-Gillingham-based group. The Alphabetic Phonics group did improve on reading performance from pre-test to post-test, however the traditional developmental reading course appeared to be more effective.

Limitations: we were not able to access the original article, and so details on the study were obtained from the review article by Ritchey and Goeke (2006). Consequently, we cannot comment on whether the methodology used by Chandler et al. was sound. The study did use a quasi-

experimental design and it is unclear whether there were significant differences in reading performance between the two groups and, if so, whether this was controlled for in the analyses.

Foorman et al. (1997):

114 second and third grade students with reading disabilities underwent Orton-Gillingham-based synthetic phonics instruction, analytic phonics instruction or sight word reading instruction for 60 mins/day across the school year. Students were measured prior to taking part in reading instruction, four times during the course of the intervention period and again at the end of the school year (once the intervention was complete). Children were measured on phonological processing, orthographic processing and word reading (Woodcock Johnson Psychoeducational Battery-Revised).

Growth curve analysis was used to analyse the results. When controlling for age, the synthetic phonics instruction group significantly outperformed the analytic phonics group on all three measures, although this was no longer significant once demographic variables were controlled for. The synthetic phonics group also outperformed the sight word instruction group on phonological processing and word reading; however when demographic variables were controlled for, the synthetic group was superior to the sight word reading group for phonological processing only.

Limitations: did not randomly assign students to the treatment groups; the synthetic phonics group had higher initial decoding scores (measured using the Woodcock Johnson Psychoeducational Battery-Revised Basic Reading Cluster) than the other two groups — there is no mention of whether this was controlled for in analyses.

Ritchey and Goeke (2006):

Ritchey and Goeke reviewed 12 studies investigating Orton-Gillingham instruction, including those discussed above and noted that there was a need for thorough, scientifically-based research for Orton-Gillingham. Specifically, the article notes that there are several methodological issues present in many of the Orton-Gillingham studies:

- primarily quasi-experimental designs;
- many have sample sizes <50;
- several older studies;
- more recent articles also do not report some information: details regarding procedures used to ensure that treatment groups were comparable in quasi-experimental designs; treatment fidelity; technical characteristics of dependent measures; details on training provided to teachers/instructors.

The authors advise caution when generalising any of the studies' results. They note that "differences in study participants, settings, location, program type, instruction time, the Orton-Gillingham instructional program and implementation, and outcome measures must be considered when evaluating this research."

**Price:**

The cost of Orton-Gillingham training varies depending on the provider and the type of Orton-Gillingham-based approach used. Only the fees for the training and certification provided by the Institute for Multi-Sensory Education (IMSE) will be described below. The IMSE offers two levels of Orton-Gillingham certification for individuals who have a Bachelor's degree as well as a teaching/other preapproved educational licensure:

### *Level 1 Certification:*

- Coursework: 30 hours for comprehensive training; 69 hours for advanced training.
- Practicum: 45 (60 mins) lessons or 60 (45 mins) lessons + 5 observations.
- Fees: \$975 course fee; \$75 application fee (one time); \$200/hour + travel expenses for practicum observation fee; \$75 Annual renewal fee.

### *Level 2 Certification — Specialist:*

- If the individual has received Level 1 comprehensive training, then they will receive Advanced training, and vice versa. Both comprehensive and advanced practicums must be completed for Level 2 certification.
- Fees: \$975 course fee; \$75 application fee (one time); \$200/hour + travel expenses for practicum observation fee; \$75 Annual renewal fee.

For more details see <http://www.orton-gillingham.com/training/certification/>.

### **What it involves:**

An instructional, generally one-on-one approach (though it can also be done in small groups and has been used in classrooms). The main purpose of the approach is to assist the participant in becoming a competent reader/writer and an independent learner. It involves the following characteristics (note: details below were obtained from <http://www.ortonacademy.org/approach.php>):

- *Personalised*  
Involves recognising the individual needs of the learner and identifying whether there are additional difficulties that may complicate learning e.g. comorbid conditions.
- *Multisensory*  
Multisensory methods are used by the instructor to convey content. The instructor also demonstrates how students can engage in multisensory learning. The student learns content through auditory, visual and kinaesthetic elements, i.e. listening, reading, speaking and writing. This is believed to enhance memory storage and recall.
- *Diagnostic and Prescriptive*  
Diagnostic as the instructor continuously monitors the verbal, nonverbal and written responses of the student to identify both the student's problems and their progress. This information in turn informs subsequent sessions.  
Prescriptive as the sessions will contain instructional elements that focus on resolving the student's difficulties and improving on their progress from previous sessions.
- *Direct Instruction*  
Lesson formats are used to ensure that the student understands what needs to be learned, why it needs to be learned and how it will be learned.
- *Systematic Phonics*  
The alphabet principle is stressed during initial stages of reading development, particularly sound/symbol associations.
- *Applied Linguistics*

Applied linguistics are drawn upon in initial decoding and encoding stages of reading and writing as well as in advanced stages involving syllabic, morphemic, semantic and grammatical structures of language and the English writing system.

- *Linguistic Competence*

Language patterns that determine word order and sentence structure as well as the meaning of words and phrases are stressed. More advanced work involves recognising the various forms that characterise the common literary forms employed by writers

- *Systematic and Structured*

Information is presented in an ordered way that indicates the relationship between the material being taught and previously taught information. Sound/symbol associations, linguistic rules and generalisations are introduced in a linguistically logical and understandable order.

- *Sequential, Incremental and Cumulative*

As linguistic skills are mastered, learning progresses from simple and well-learned material to more complex information. Firstly, students read and write sounds in isolation. This is followed by the blending of sounds into syllables and words. Elements of language such as consonants, vowels, digraphs, blends and diphthongs are learnt in an orderly manner, followed by more advanced structural elements such as syllable types, roots and affixes. Previously learnt material is continuously revised until students achieve mastery. Vocabulary, sentence structure, composition and reading comprehension are addressed in a similar structured, sequential and cumulative manner.

- *Continuous Feedback and Positive Reinforcement*

This enables the development of greater self-confidence and a close teacher-student relationship.

- *Cognitive Approach*

Students understand the reasons for what they are learning, by learning the history and structural generalisations and rules of the English language. They also learn the reasons for their learning strategies and how to apply the necessary language knowledge for competent reading and writing.

- *Emotionally Sound*

Success in reading/writing/spelling increases self-confidence and motivation for learning.

The Orton-Gillingham approach has several adaptations, including Alphabetic Phonics, Wilson Reading System, Herman Method, The Spalding Method, The Slingerland Approach (discussed separately in this report) and Project Read. The studies discussed below focus on Orton-Gillingham as well as Orton-Gillingham-based training and interventions. Although the programmes vary slightly, the core multisensory, systematic, sequential, phonics-based approach is a consistent aspect of all adaptations.

## **References:**

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**Website / for more information see:**

<http://www.ortonacademy.org/index.php>