Aiding parents to teach reading at home: The RMIT Clinic approach.

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The RMIT Psychology Clinic was established more than 30 years ago to provide practical experience in psychology for post-graduate students and to offer a community service. The Clinic offers a range of psychology services to children and adults, and the charge is $60 per session, a fee to cover the University's cost for space, electricity, reception staff, tests etc. The educational psychology division of the this service is by far the most patronised, with more than half of all referrals for children and adolescents struggling to make adequate progress in school, particularly in literacy. The Clinic provides assessment, program recommendation, a written report, and training to parents who wish to supplement the literacy instruction supplied by their child's school. Referrals are often suggested by teachers, school psychologists and speech pathologists, paediatricians and by word of mouth from other clients.

Whereas, some clients are solely interested in a thorough psychological assessment and report, the main focus of the Clinic is on intervention and evaluation. Paralleling the Psychology Division's philosophy that empiricism should drive practice, the Clinic model takes as its theme for assessment and intervention, practices that have sound theoretical and empirical support, with the added requirement that they be feasible in the real world. Masters and doctoral clinicians are provided with a scaffold that guides them in their clinical work from initial interview to follow-up. At the assigning of the clinicians' first educational referral, they are provided with a video of a similar case - from initial interview through to the follow-up stage, along with a document that describes the rationale for each step in the process. Additionally, they are taught the principles of effective instruction in the educational psychology component of their course, and the procedural details are covered in a case conference component.

Supervisors initially provide direct service to the client in the Clinic with minimal responsibility assigned to the clinician apart from the initial telephone contact, and a small role in taking notes and taking the client's developmental history. After clinicians have completed a case with a supervisor, their level of responsibility is increased. They have supervision sessions to plan the next case and practise client-clinician interactions (e.g., demonstrating a teaching procedure to a parent) as simulations in the supervision sessions prior to the interviews. All their subsequent solo sessions with clients are video-recorded, and supervisors provide feedback to clinicians based on the viewing of the tapes.

The programs employed by the Clinic enable parents, or others, who do not have a background in reading instruction to successfully teach the student. This is possible because the programs are carefully designed and scripted, such that everything that needs to be done or said by the home tutor is prescribed in the teacher's book.

The programs are loaned to the parents without charge, although a consumable book (if required) is charged at its cost (usually about $18). Adults with a literacy difficulty may also avail themselves of the service if they have a friend/partner who is able to act as tutor. The purpose of the Clinic is not to provide teaching directly to the student, a strategy for which it is unequipped, but to enable effective instruction to occur within the home, supported by Clinic staff throughout the period of the program.

Though referrals can be suggested by anyone, they are only accepted following a parent request for assistance. There is often a waiting list that may extend for some months. The typical Clinic sequence for an educational intervention begins with an initial phone call from the clinician to ensure that the client wishes to proceed. Among other tasks are to provide an explanation of the Clinic's role and limitations, for example, that it doesn't have the resources to offer direct teaching to their child. The clinician stresses that the Clinic's involvement is to provide direction and support whilst the parent does the instructional work. Related to this

issue is the need to discern the expectations of the parent/client for their child arising from the referral. Even though the parent will have been sent a brochure outlining the Clinic approach, there have been situations in which the client's expectations were that the Clinic provides the "fix" without the parents own involvement. Sometimes these misunderstandings have only surfaced during the session that provides feedback of the assessment results and planning the intervention. In such cases the intervention has not proceeded and much time has been wasted by both parent and clinician.

Also in the initial phone call, the clinician requests all relevant reports to be brought to the initial interview. These comprise recent school reports, along with other psychological, educational, paediatric, audiological, vision, and educational consultancy reports.

The initial interview has several objectives. The obvious task is to obtain information relevant to the client's circumstances. Additionally, it is an opportunity for the clinician to establish credibility with the client through answering any questions they may have. Further, it represents a time to instil a sense of hope that, if the parents follow the prescribed regimen, their child will make the progress that they seek. The child (if under 14 or so) need not attend this session, as parents often feel freer to discuss the situation in their absence.

The information sought includes relevant background information, such as, developmental and educational history - pregnancy, any neonatal issues, toileting, walking, speech & language, illnesses, ear infections, hospitalisations, and the presence of reading problems in the wider family. It includes how well the child is socialised within the home and at school, and relationships with family members and peers. Discussion ensues about the various reports brought by the parents, in particular, the recent school reports.

An important issue is the attempt to gauge whether the parent is likely to be able to implement a program with their child. There may be several reasons why an intervention can be unlikely to achieve success. The child may not display sufficient respect to the parent(s) to enable a teacher-student relationship to function. The parents may not have sufficient depth of commitment to take on the role for the requisite intensity and period. There may be too many competing family priorities for the intervention to be regularly scheduled. It is possible that the parents do not have the literacy skills to manage the text-based program, or may struggle themselves with a sounds-based approach to reading. Though it is usually parents who take the role, the Clinic has provided training to adult carers, various volunteers, such as from Rotary clubs, school volunteers, and senior citizen organisations. Also trained have been older siblings, tertiary counsellors, and interested classroom teachers and aides.

Other topics usually addressed include explaining the function of the Clinic as both teaching facility and community resource, and the role of the student clinicians. This is followed by information about the sequence of sessions addressing assessment, report writing, parent training, regular parent contact and support, and follow-up evaluation of success. Again, the limitations of the Clinic's direct influence are stressed. Clinicians are urged to ensure they make clear the parent's intervention responsibility is at least five times/week implementation of the program. The rationale for this expectation is couched in terms of the child's rate of learning having been below average up to now, and the need for his learning rate to exceed the average if the child is to make headway against his age peers. This achievement necessarily entails an efficient, focussed program taught intensively and over a sufficient period. See Figure 1 for a visualisation of this point.

Agreement is sought about feasible outcomes for the student over the agreed intervention period, and what period of time would necessary for a given outcome in terms of grade or age level attainment. For example, it is suggested to parents that participation in the Corrective Reading Decoding program will evince these approximate grade levels. Level A moves from early first to early second grade; B1 from early second to end of second grade; Level B2 from early third to end of third grade; Level C1 from early fourth to end of fourth grade; C2 from early fifth to end of fifth grade. These are estimations based upon practitioner discussion on the Direct Instruction Listserve rather than on the publishers suggested levels.

Session two usually involves an intellectual assessment. This is not strictly necessary, and is waived if one has been performed in the past 18 months, or if the parent is uninterested in such information. The major function is to rule out intellectual disability (a category that in Australia entitles a student to additional educational assistance). It is also an opportunity for the student clinicians to develop their assessment skills. Regardless of whether the intellectual assessment is performed, it is explained to parents that even if a child's intellectual ability is below-average, this condition does not limit his potential achievements but does limit the approaches by which he can be effectively taught.

In session three there is an assessment of reading and other educational skills. This typically involves phonological skills, listening comprehension, reading comprehension, oral reading fluency, decoding and word recognition efficiency, writing, spelling and arithmetic. It also includes placement tests for any of the likely interventions, particularly decoding, comprehension and spelling.

A report is then prepared, couched in terms that are not overly technical. It is a report intended primarily for parents to offer some description and explanation of their child's educational attainments with respect to those of his age/grade peers. This is important to parents, as their child's school reports rarely contain such specific information, usually offering vague descriptors as "John is consolidating his skills in transacting with print". Additionally, the report can be useful for parents to take to their school in attempts to obtain additional assistance for their child. The assessments may have indicated a specific area of difficulty that is addressable by a discrete intervention, rather than a global one. Most commonly, of course, this primary focus involves reading rate and accuracy. Finally, the report enables a discussion about the relative contributions of individually-based vs instructionally-based influences on the student's struggles with literacy. This leads to more detailed information about the most appropriate program.

The report is usually sent to parents to enable time for them to digest its contents, and to discuss them with their partner, and with any other supportive friends or professionals. This approach has been employed as parents occasionally are distressed about the details when they are presented all at once in an interview - to the degree that they are unable to derive benefit from the remainder of that session. Session four involves discussion of the written report, answering any queries about the assessment or the proposed intervention. Children do not usually attend this session unless they are of secondary school age, a time when their cooperation in an intervention must be actively sought rather than simply presumed. Additionally, they are in a better position to understand proceedings.

Assuming an intervention is feasible, sessions five and six involve the loan of the program and the training in its use. The child attends these sessions. Later sessions involve the clinician monitoring the progress initially weekly by phone. Subsequent meetings occur for mid and post-program testing, and when new programs are selected for further training and monitoring, for example, spelling or more advanced levels of reading.

The approach to training usually involves a model-lead-test sequence. First, the clinician provides information about the program, including the modifications to enable a group program to be delivered through 1:1 tutoring. Second, the clinician demonstrates the program with the student, while the parent watches. Each exercise is taught including the provision of specified error corrections and the *repeat until firm* instruction is emphasised. The parent then practises reteaching part of each exercise to their child, with feedback from the clinician. In this manner, the whole of Lesson 1 is taught in the session. In the case of Corrective Reading, there is also practice of the timed reading, a task that doesn't occur in the first lesson. The parent is provided with a sheet of the main points to remember, and directed to their copy of the Teachers Guide for a second line of enquiry when questions arise. They are also invited to ring their clinician over any other troublesome issues.

At least one complete session (1 to 1.5 hours) is devoted to this sequence. Another session (one week later) is scheduled before the parent is asked to commence the 5 times per week program implementation at home. During the following week, the parent (or preferably parents) practise the various tasks in the first couple of lessons - either on each other, or with a sibling of the student. It is thought that practising on the target student before some level of competence is attained may entrench errors and also represent an unsatisfactory first learning experience for the child. Parents are advised that they may not feel entirely comfortable for 20 lessons, but that their fluency with the program should increase as their familiarity with the scripts improves. This process of *demonstration-practice-feedback* continues until the clinician is satisfied that the parent is able to adequately present the program. Clinicians employ the *Tutor Monitoring Form* (Figure 2) to gauge whether a parent is firm on the skills required. The level of training appears to be a threat to effectiveness, given the extended time and practice necessary for the training of teachers in classrooms. However, the *Corrective Reading* program when presented one-to-one has fewer crucial presentation skills, such as managing signalling and choral responding. The experience in the Clinic is that most parents are able to present the program with sufficient integrity to elicit progress. There is a fail-safe method that enables early identification of problems in program presentation, and this is discussed further below.

It should be noted that the process of a parent being prepared to contact the Clinic is in itself a filtering process. It implies that the parent is motivated, and usually, that they are prepared to take upon themselves the responsibility for program implementation. The author, in a previous role as a peripatetic school psychologist, found much less success when the impetus for intervention arose from the school rather than from within the family. Both parent cooperation and acceptance of responsibility were less likely to eventuate than under the current Clinic model.

The training of two parents is recommended. It is advantageous because it reduces the load on one parent, reduces the problems of student reluctance, and allows for supportive collaboration - all of which enhance program fidelity and endurance. During the training sessions attention to the Teachers Guide is constantly drawn when parents have questions about the rationale for various procedures. Additionally, discussion of the most important initial issues revolves around a document - the *Corrective Reading program: Parent Information* sheet (Figure 3) – that highlights the most common concerns parents express.

Apart from initial training of the parents, the Clinic model involves monitoring of their skills, on-going support, and a variety of pre- and post-test evaluation strategies. The success of the program is heavily dependent upon treatment fidelity, thus the necessity for continued monitoring and support. In particular, the requirement of finding the time and energy to maintain a punishing schedule of 5 lessons (of 30-50 minutes) per week often can be difficult for parents to maintain over at least 13 weeks (the length of one level of the *Corrective Reading* program) or up to 20 weeks for the *Teach Your Child To Read In 100 Easy Lessons* program. This overseeing role enables the rapid response to a student's failure to progress. The regular contact also has an important secondary effect of enhancing the willpower necessary to achieve success. When parents know that they will receive a call in the next week or fortnight, there is increased motivation to persist. Our experience has been that without this continued Clinic role, programs may be discontinued prematurely or altered to the extent that success is jeopardized.

Follow-up phone calls are (typically) weekly for the first 6 weeks, fading to fortnightly until the program is completed. The amount of support parents require varies from case to case. Data from the *Corrective Reading Program Progress Sheet* (Figure 4) is collected at the time of each contact to ensure that daily rate and accuracy targets are being met. The progress sheet fulfils several roles:
1. As a guide for feedback between clinician and parent on progress and problems.
2. As a subtle spur to maintain lesson frequency - the clinician's interest in this aspect helps parents appreciate the importance of frequency, as it is always discussed in sessions.
3. As a means of increasing the amount of free-reading achieved by the student. Research has demonstrated the importance of increasing the struggling student's volume of reading. It provides additional opportunity to

practise the skills taught in the program, and to learn new words - there are far more opportunities to increase vocabulary through reading than through conversation or television.

4. As a means of ensuring that progress is rapid and continuous. If issues arise that threaten the integrity of the program, they will quickly become apparent in the data sheets, and action can be promptly instituted.

There have been circumstances when it has been more fruitful for two parents to *swap* children for the purposes of implementing the program. This option is rare for reasons of geography, but may be considered when parents are unable to present the program to their child without being punitive, when they are quite patient with a child other than their own.

A number of parents have found it useful to plan an incentive program to address any current or potential problem of student resistance. There are a number of options: One can use the motivational points system incorporated in the Corrective Reading program, and develop an associated reward menu suited to the needs of the child and family financial constraints. Alternatively, an individual incentive program can be designed in conjunction with the clinician, it being as simple or as complex as the situation requires.

One modification that has been particularly successful with impulsive or distractible students involves the use of a visual progress indicator. This can involve a thermometer-like chart with a movable indicator that can be slid up or down to represent how well the student is concentrating at any given time. When the indicator reaches the top a reinforcer is delivered. This is usually an edible, such as M & M, raisin, or nut. The rationale behind the visual progress indicator is to more closely tie immediate behaviour to its consequences for students who are not well managed by more distal schedules. The proximity to reinforcement varies moment-by-moment as the indicator is slid up a little for appropriate behaviour or down a little for inappropriate behaviour. This tends to increase the salience of the consequence for such students, and offers an external scaffold to support their own attempts at increasing their concentration on the task.

Most of the referrals to the Clinic occur for students in Year 3 and above, and who prove to have significant decoding and fluency difficulties. The program found most apt for these struggling readers is the Corrective Reading program: Decoding Strand and placement testing determines the appropriate level.

The placement test is designed to ensure that the student is neither over-challenged by the level of difficulty of the program, nor already competent at that level. The test is administered individually and takes about five to ten minutes. Detailed instructions are provided for administration and scoring.

The possible outcomes of such assessments are that the child's current decoding skill level is below those of the lowest level of the program (Level A) and would be best addressed with a beginning reading program, such as *Teach Your Child To Read In 100 Easy Lessons*. It may be that the child is appropriate for placement in one of the four program levels, or that the child has already mastered the decoding skills taught at each level, and any reading deficits are probably not in the area of decoding.

Decisions about which programs and in which sequence are based upon the results of the assessment. A typical report to parents is provided below and the rationale for the choice of programs becomes clearer.

Confidential Psycho-Educational Assessment
Client's Name: Adam D.
Date of Birth: 10th November, 1990
Chronological Age: 12 years, 10 months
School: W. Primary Scool
Grade: 6
Dates of Examination: 29th August and 4th September, 2004
Tests Administered:

Wechsler Intelligence Scale for Children – Third Edition (WISC-III)
Wide Range Achievement Test – 3 (WRAT-3)
      Word Reading subtest
      Spelling subtest
Woodcock Reading Mastery Tests – Revised
      Word Attack subtest
Spadafore Diagnostic Reading Test
      Silent Reading Comprehension subtest
      Listening Comprehension subtest
Comprehensive Test of Phonological Processing (CTOPP)
      Elision Subtest
      Blending Words
      Memory for Digits
      Rapid Digit Naming
      Nonword Repetition
      Rapid Letter Naming
Test of Word Reading Efficiency (TOWRE)
Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

Examiners' Names and Qualifications:
Kerry Hempenstall [Ph.D., B.Sc., Dip.Ed., Dip.Soc.Studies, Dip.Ed.Psych., MAPS].
Nicholas B. [B.App.Sc. (Hons)].

Referral Information:
Adam was referred to the Clinic by his father for intellectual and educational assessment to establish his strengths and weaknesses, in particular in the literacy area.

Background Information:
Due to time considerations, a detailed discussion of background information was omitted. However considerable written information was received from Mr D. prior to the assessment appointment, and key aspects were discussed.

Behavioural Observations:
Adam presented as quiet and reserved. Because a lot of the conversation and questions were directed toward Adam's father, Adam did not have a lot of opportunity to interact with the examiners. However, during the assessment (over two sessions), Adam was generally attentive and concentrated on each of the tasks. Adam attempted most of the tasks with effort; however, as they increased in complexity, he was inclined to claim an inability to find the answer - sometimes prematurely.

Assessment:

General Intellectual Assessment
The Wechsler Intelligence Scale for Children (WISC-III) was used to determine Adam's current level of intellectual functioning. The WISC-III contains 11 individual tests that measure a variety of skills and abilities thought to be important in overall intellectual functioning. The 11 individual tests are divided into two groups. Half of the subtests (five) form the Verbal Scale (Information, Similarities, Arithmetic, Vocabulary and Comprehension), and the other five form the Performance Scale (Picture Completion, Coding, Picture Arrangement, Block Design and Object Assembly). The Verbal Scale is highly structured, dependent on Adam's accumulated experiences, and usually requires him to respond with what he already knows. The Performance Scale is less structured and is more dependent on Adam's immediate problem solving ability and requires him to meet new situations, and to apply past experiences and previously acquired skills to a new set of demands.

The Verbal and Performance Scale scores are combined to provide the Full Scale score or IQ. The WISC-III Full Scale score is one way to view Adam's overall thinking and reasoning skills.

Adam obtained a Full Scale IQ of 116 ± 6 on the WISC-III. Adam's overall performance is classified in the High Average range of intellectual functioning. His general cognitive ability is ranked at the 86th percentile indicating that he performed equal to or better than 86% of his same age peers.

There was, however, a statistically significant 25 IQ point difference between Adam's Verbal and Performance scores in favour of the Performance scale. The results suggest that Adam's non-verbal abilities are significantly better developed than his verbal abilities.

Whilst research suggests that IQ scores are usually stable, it is difficult to be certain that these results are a true reflection of Adam's current level of intellectual functioning. Furthermore, while IQ scores are reasonably predictive of educational achievement, they may not be as effective in the prediction of non-test behaviour and non-academic intellectual ability. IQ is not a pure measure of innate capacity, but rather reflects experience in addition to potential and education in addition to aptitude. Interestingly, IQ is not as strong a predictor of reading success as is often believed - phonemic awareness is however a very strong predictor.

Reading Assessment:
Research has shown that the skills most strongly associated with early reading success involve phonological processing. When these skills are taught early in a child's career, the prognosis can be changed for at-risk beginning readers. Three major phonological processes have been identified:

Phonological Awareness
Phonological awareness skills refer to the oral skills that enable individuals to recognise that spoken words consist of individual sounds. This ability to being able to break words into sounds is the basis for decoding strategies that are necessary for the early stages of reading.

Two subtests from the Comprehensive Test of Phonological Processing (CTTOP) were administered to assess phonological awareness: Elision and Blending Words. Elision is a phoneme deletion task in which the participant is required to repeat a word with one phoneme omitted (e.g. Say *time* - now say *time* without the "m"). Adam's performance on this test was at the 5th percentile. The second test administered was Blending Words, which is a phoneme blending task. The examiner reads words aloud to the subject with a pause between each phoneme, and the subject is required to identify the word. Adam's performance on this test was at the 16th percentile. Overall, these two results indicate that Adam's phonological awareness is at the 5th percentile, indicating that his skills are equal to or better than 5% of peers his age. This represents a severe deficit in an important component of beginning reading.

Phonological recoding in lexical access
A number of researchers have noted the predictive power of naming-speed tasks, using pictures, numbers, and letters. Both naming speed and sight word reading rely on rapid, automatic symbol retrieval. It has been shown that slow naming speed is specific to reading disability, and not evident in those with generalised reading problems. Efficient retrieval of phonological information and execution of sequences of operations are required when readers attempt to decode unfamiliar words. A lack of fluency in reading is a likely consequence of problems in this area.

Two subtests from the CTTOP were administered in order to assess Adam's phonological recoding skills: Rapid Digit Naming and Rapid Letter Naming. Rapid Digit Naming requires the subject to read numerals from a list as quickly as possible. Adam achieved a score at the 9th percentile. Rapid Letter Naming requires the subject to read letters from a list as quickly as possible. Adam achieved a score at the 25th percentile. Together these results indicate that Adam's naming speed for numbers and letters is better than or equal to 21% of children his age. This represents a mild deficit in this aspect of reading.

Phonological recoding in working memory
The beginner reader has to be able to decode a series of graphemes, and temporarily order them to allow the complex skill of blending to occur. This skill is an important determinant of early reading success. It is relevant to the ability to decode novel long words, and a deficit is likely to impair both listening and reading comprehension of complex sentences.

Two subtests from the CTTOP were administered to assess blending capacities: Memory for Digits and Nonword Repetition. Memory for Digits requires the participant to repeat a group of digits that have been read aloud. This needs to be done in the same order as they were read out. Adam performed at the 9th percentile. Nonword Repetition was the second test used and involves non-words read aloud to the participant, and having the participant repeat them verbatim. As the participant progresses the non-words become longer, and is therefore a test of phonological memory. Adam also achieved a score at the 9th percentile. Combined, these results indicate that Adam's working memory capacity is as the 5th percentile. Therefore, Adam is performing equal to or better than 5% of peers his age. This represents a severe deficit in another important component of beginning reading.

What do these CTOPP scores mean?
Low scores on tests of phonological processing are usually considered indicative of problems with the quality of word representation in the lexicon. The representations of written word are acquired through phonemic mappings to letters but are dependent also on some degree of awareness that words are constructed of meaningless speech segments that can be effectively manipulated to assist reading. When representations of words are unstable (or stable but incorrect), matching a stimulus word with the correct phonemically stored counterpart will be slow and error prone, as the individual is required to reject all the competing phonemically similar but semantically impossible responses.

In other words, if these phonological representations are imprecise then tasks such as phonological recoding in lexical access (as measured by Naming Speed) and phonological recoding in working memory (as measured by Digit Span and Non-word Repetition) may also present problems for such individuals, and there is ample evidence that one or both do so. For example, if the phonological representation of "dog" is unreliable, then the association between the name of the animal and its meaning will be vague. A picture of a dog may quickly evoke its meaning but the phonologically assembled label is slowed because other similar labels (e.g., god, dock, bog) may need to be rejected. Scrolling through a range of possibilities requires more time than accessing a clear uniquely described form. The problem for reading is that this may disrupt the comprehension process, and slow the reading speed to the extent that it becomes a non-preferred activity.

Recent research findings have noted that those with a double deficit (those readers performing at a low level in more than one phonological skill area) are doubly disadvantaged with respect to their reading development, and are likely to require more intensive and extended instruction than those with a single area of deficit.

Decoding of Non-Words
The decoding of non-words is considered the most appropriate measure of phonological recoding. It provides an indication of the capacity to transfer the oral skill of phonological awareness to the task of decoding print. The Word Attack subtest of the Woodcock Reading Mastery Test measures an individual's ability to apply phonetic and structural analysis to the pronunciation of written nonsense words. This task eliminates the use of purely visual word recognition or contextual strategies. The ability to do this is important in the development of skilled reading. Adam's performance on this test was consistent with the performance of an average 7.6 year old (a Grade 2.2 level), clearly well below average.

The Wide Range Achievement Test – Revision Three (WRAT3) was also administered in order to access Adam's ability to read words that are presented in isolation. In these circumstances, the individual may either decode the words or recognise them as whole words. Adam was able to correctly read a range of words (e.g., 'in', 'cat',

'book'). However, as the words became longer and more complicated (e.g., 'collapse', 'contagious'), Adam produced a greater number of errors. Adam's performance placed him at the 8th percentile, which means he can read equal to or better than 8% of his same age peers, which corresponds to Grade 3 level.

Fluency
The Test of Word Reading Efficiency (TOWRE) was used to assess Adam's speed and accuracy in reading, known as reading fluency. Children are successful with decoding when the process used to identify words is fast and nearly effortless or automatic. Thus, the ability to recognize words with little attention required to the word's appearance allows a student to exert more effort in understanding what has been read. The ability to read words by sight automatically is a key to skilled reading and highly associated with reading success.

The TOWRE is a measure of word-reading fluency. It provides an efficient means of monitoring the growth of two kinds of word reading skills that are critical in the development of overall reading ability: the ability to accurately recognize familiar words as whole units or "sight words" and the ability to "sound out" words quickly. The first of two subtests, Sight Word Efficiency (SWE) was used to assess the number of real printed words that can be accurately identified within 45 seconds. Adam's scored in the 2nd percentile for the SWE subtest. This puts him at severe disadvantage in understanding what he reads, because his recognition is slow and error-prone.

The second of the two subtests, Phonetic Decoding Efficiency (PDE), was used to measure the number of pronounceable printed nonwords that Adam could decode within 45 seconds. He performed in the 2nd percentile for the PDE subtest.

To assess Adam's fluency with text rather than with lists, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) was used. His reading rate of 30 words read correctly in a minute was indicative of a high risk of difficulties at a Grade 6 level. This can be compared with the average age peer who is expected to attain about 150 words correct per minute with text of a grade 6 level.

Spelling
Good spelling skills are closely related to an early history of a solid phonemic awareness and an understanding that letters correspond to sounds. The more attention that is paid to regular letter groupings (sounds) found in words, the more strongly these groupings are cemented in our memories, thereby improving spelling. To test Adam's spelling ability, the WRAT3 spelling measure was used. Adam's performance in this test was that expected of a Grade 2 student, which is equal to or better than approximately 2% of children his age, indicative of a seriously delayed skill.

Comprehension
Comprehension is another important component of reading ability. Comprehension is the ability to understand the meanings of individual words and sentences, whether spoken or written. Reading comprehension involves understanding written text, and listening comprehension involves understanding spoken language. The Silent Reading and Listening Comprehension subtests of the Spadafore Diagnostic Reading Test were used to assess Adam's comprehension skills.

The Silent Reading Comprehension subtest requires the participant to read a passage and then answer oral questions related to the passage. Adam's reading comprehension was assessed at a Grade 2 level. This indicates that Adam struggled to recall details in the passages he read. This may be due either to problems in remembering the main points, or to a difficulty in the mechanical process of reading that impedes his ability to understand the author's intent.

A comparison with the Listening Comprehension subtest can help answer the question of origin. This subtest requires the child to listen to a short passage read by the examiner, and then answer oral questions directly related to

the story. It tests the child's ability to identify the main ideas of a story, remember the story sequence, and understand cause and effect. It is identical to the Silent Reading Comprehension except that it removes the requirement for the student to "get the words off the page". Adam's Listening Comprehension was at a level expected of a child in Grade 6. This indicates that he does not have difficulties obtaining meaning from what he hears, and is able to remember the details. Thus, his deficits in reading comprehension are not evident in listening comprehension. This discrepancy also eliminates the possibility of working memory difficulties accounting for his low reading comprehension score – as memory is equally challenged in each subtest.

Summary
Assessment has demonstrated that Adam has severe deficits in two of the major precursors for reading achievement - phonological awareness and phonological recoding in working memory, and also a moderate deficit in naming speed. These deficits are consistent with the observed attainment levels in his spelling and decoding. Adam's reading comprehension is limited by his ability to decode words. The large discrepancy between listening comprehension and reading comprehension adds weight to the view that Adam's literacy difficulty is a modular deficit, rather than one derived from an overall language or intellectual difficulty. This discrepancy is now employed by many as a working definition of dyslexia, particularly when the deficit is phonological. Additionally, the discrepancy between Adam's intellectual level (within the normal range) and his literacy attainments (markedly delayed) meets the traditional definition of reading disability or dyslexia. The family history of bright siblings with reading difficulty suggests an inherited component. However, the instructional environment has not been sufficiently intensive to compensate for Adam's phonological deficit. It is unfortunate that suitably targeted assistance was not provided earlier when altering Adam's academic future would have been significantly easier.

Recommendations:
The Corrective Reading Program: Decoding placement test revealed that Level B1 would be the most appropriate level for Adam to commence, as this reflects his current reading attainment. The program's emphasis on skilled use of the decoding strategies when reading text will assist his reading development significantly. Level B1 typically elevates decoding skill from early Grade 2 to beginning of Grade 3, and fluency from a 60 words per minute to 90 words per minute at that text difficulty level. If he is to make significant gains, the intensity of assistance will need to be maximized. It should be recognized that he will need to complete Level C in addition to Level B1 and Level B2 if he is to have any chance of managing secondary school textbooks. This constitutes a combined total of 265 lessons, a total at five lessons per week will take more than a year. By the conclusion, he should be capable of reading text at beyond a Grade 5 level and at a fluency of 130 words per minute.

As Adam progresses through this program, other skills such as spelling could be similarly addressed using appropriate programs available from the Clinic. Adam should also be encouraged to participate in recreational reading, employing books that are related to his interests, but at a level at which he is able read with relative ease.

Recommendations for the secondary school
Adam will require intensive, systematic and individualised teaching if he is to improve his reading, spelling and written skills. The programs available at the RMIT Clinic are designed to be taught at school in sessions of about 50 minutes per day. Even with such high quality instruction, progress will be slow, and Adam will probably need such literacy instruction through high school and beyond.

Adam will need substantial accommodations to help him meet the reading and writing demands of the secondary curriculum. An accommodation is a school change that allows students to utilise their learning strengths, precluding or diminishing the limiting effects of their disability. For example, Adam will require alternative arrangements to access written material in text books, alternatives to note taking, to written composition, and to ways of taking exams. Accommodations may also include extra time to complete tasks, having instructions repeated or reworded, and receiving instructions both orally and in writing. He may also require modification to curriculum content in some content subjects.
Yours sincerely,

Clinic program evaluation
Evaluation of the Clinic intervention may take several forms. First, was the program a success? Did the anticipated changes eventuate? These changes may be judged through in-program mastery tests; program behavioural-objectives analysis; pre- and post-test criterion-referenced and standardized assessment; video- and audio-taped reading behaviour.

Second, was the chosen program appropriate to the objectives negotiated with the family? That is, assuming the program itself was successful, is the outcome what the family expected? Are they satisfied with the outcome?

Third, was the program appropriately implemented? Was treatment fidelity obtained? Without it one cannot be sure that any success was due to the program itself. If there were alterations to the program, are you able to assess their impact? You may gain information useful in future interventions.

Fourth, were social-validity expectations met? If there have been noticeable changes, do they also occur outside the home or Clinic situations? In particular, can it be shown that reading has improved at school? Is there a genuine, easily recognizable change in the reading ability and attitude of the child as a consequence of the intervention? See Figure 5.

Further notes on the listening comprehension - reading comprehension discrepancy.
Comparing the results of listening comprehension to reading comprehension allows the identification of those children who have a major problem only at the level of print. They will perform well on the listening comprehension tasks, using their impressive general language skills to answer questions about a story read to them. On the reading comprehension task however, they will do relatively poorly as their under-developed decoding skills prevent them bringing into play their well-developed general language skills. When required to decode a passage unassisted, they struggle, as do their *garden-variety* peers. On the other hand, the *garden-variety* students would be expected to perform similarly on both tasks. Their reading problems are general rather than specific, and they may not have any particular reading subskill restricting their development. Their decoding skill is commensurate with their other language skills, such that if they know the meaning of a word (or phrase, or sentence), they can comprehend it whether it is presented orally or in print. The consequence for the high LC (listening comprehension)-low RC (reading comprehension) child should be intensive assistance at the decoding level. For the low LC-Low RC child, intensive assistance at both the decoding and comprehension levels is indicated.

Other possible outcomes are high LC-high RC, a result predictable from an all-round good reader; and low LC-high RC, a rare result, possibly from a student with acute attentional, hearing, or short-term memory problems. In this case, the permanence of text would allow the student to use his intact language comprehension skills, whereas the ephemeral nature of the spoken story precludes such access. *Hyperlexic* students (a rare sub-group with excellent word recognition, but poor reading comprehension) would not be detected by this discrepancy analysis, because their listening comprehension parallels their reading comprehension.

This LC-RC discrepancy represents an alternative definition of the group known as *dyslexic*; however, as with the IQ discrepancy-defined *dyslexic*, an issue is how great a discrepancy should be considered significant. Some (including the Clinic) have considered two years to be very significant given the extent of commonality of the tasks; although this is clearly an arbitrary figure, its significance being higher the younger the age of the child. As the term *dyslexia* is unlikely to disappear (at least in the short term), and parents almost always ask questions about it, the Clinic policy is to make use of the listening comprehension-reading comprehension discrepancy in discussions with parents. This is its major value since the techniques employed include systematic phonics whether the difficulty is described as *dyslexic* or *garden-variety*. The *dyslexic* classification does, however sensitize clinicians to the possibility that *dyslexic* students may be more treatment-resistant than *garden-variety*

students, and some may also require additional direct phonemic awareness instruction if progress does not occur during the intervention with a powerful code-emphasis program, such as Corrective Reading: Decoding.

Occasionally, a student struggles with the fluency aspect of the Corrective Reading: Decoding program. In this case the family returns to the Clinic and a lesson is presented by the parent, with feedback from the clinician. In the event that there are clear issues in the manner in which the program is being implemented then modelling and feedback are provided until presentation improves. If no presentation faults are apparent, a repeated reading regimen is instituted until the student is able to meet the timed reading criteria. See Figure 6.

The model described in this paper has been developing over the past 15 years. It has its limitations obviously, but has demonstrated that parents can be an effective resource in both beginning and remedial intervention. Their potential effectiveness extends beyond reading to their child, hearing their child read, and providing the occasional clue to a word's identity. The careful design of the Direct Instruction programs and their scripted mode of presentation combine to enable outcomes unavailable were all parents to rely on the education system to fully provide for their children.

Figure 1
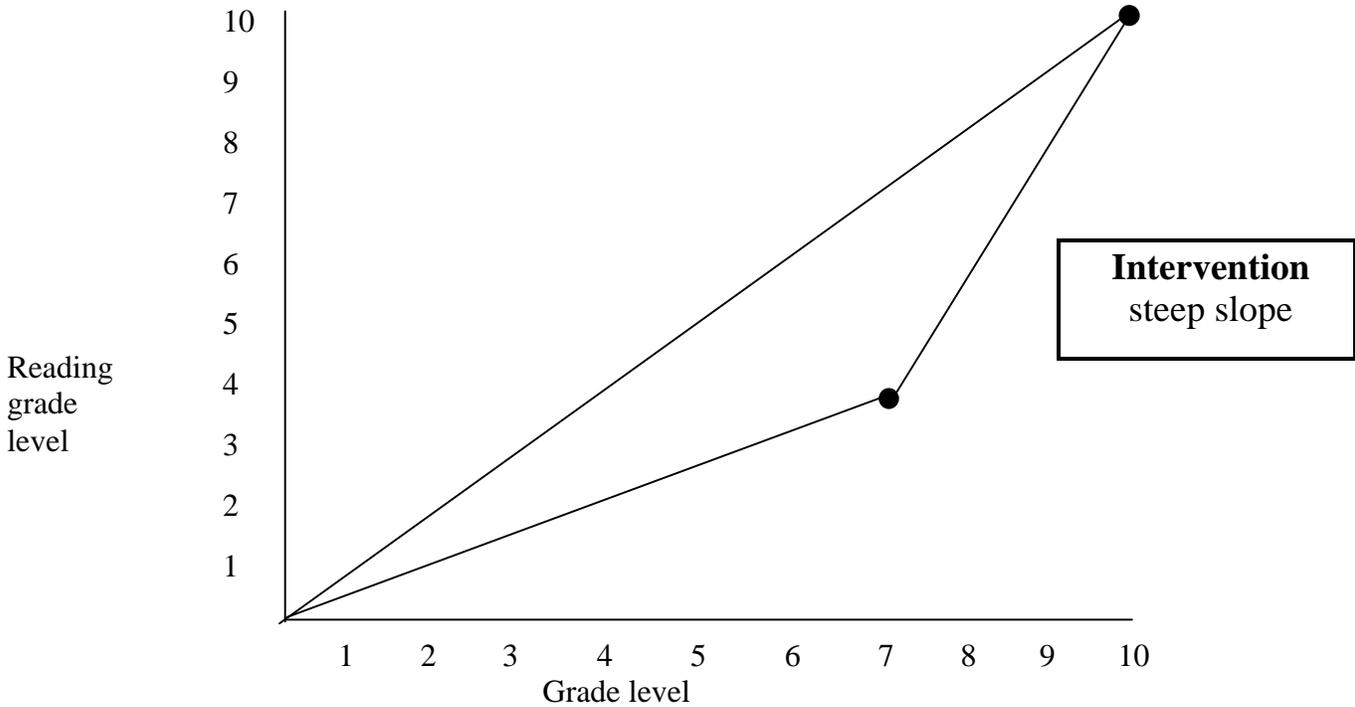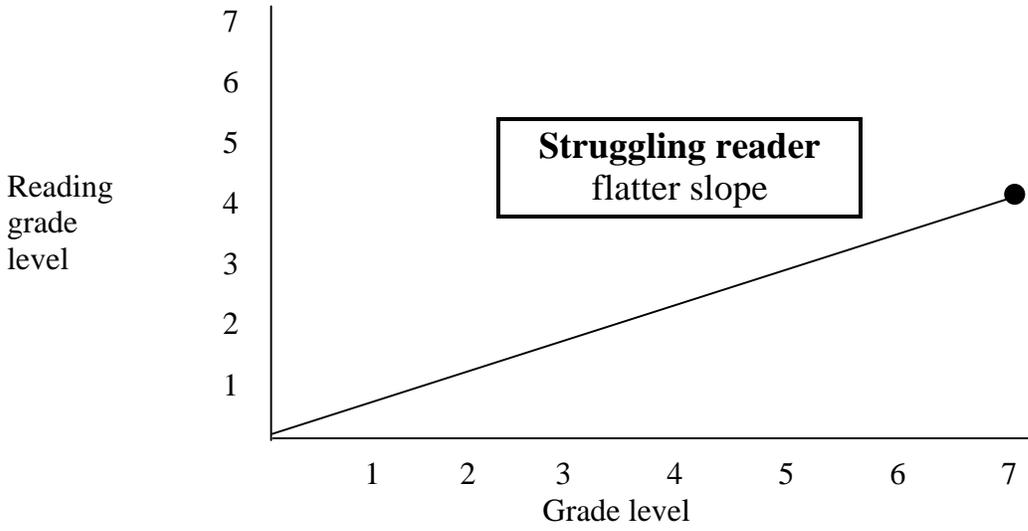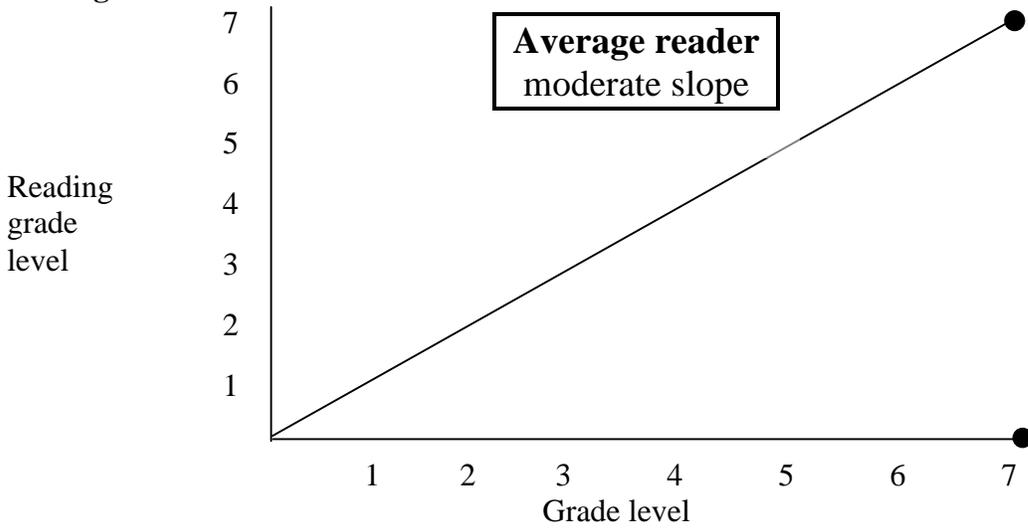
Figure 2
Corrective Reading Program Tutor Monitoring Form. Kerry Hempenstall (adapted from Nathan Crow)

		Comments
Parent displays evidence of having read and practised the script ahead of time.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
Parent gets into the lesson quickly (without unnecessary discussion or rehearsal), and maintains an undistracted task focus.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
Parent follows the script closely, and adjusts as needed when the script applies only to a group instruction.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
Parent uses praise when the child follows the rules, and when the child performs especially well. For example, when he is sitting properly, does a difficult exercise with no mistakes, responds well to error correction, tries harder than during the last exercise, etc.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
Parent does all of the prescribed exercises.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
If the point system is being used, parent assigns points quickly and appropriately.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
When signals such as clapping are required, parent claps in time and at a reasonable pace. Visual signals such as *looping* are well timed.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent moves at a brisk, but not too fast, pace.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
Parent ensures child remains alert. For example, by praising desirable behaviour. "You're answering quickly, I like that".	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
Parent good humouredly challenges the child. For example, "I know you really can do it. I bet you can do these 5 rows without even one mistake."	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent ensures child can see the book when necessary. For example, not blocking the words with parent's own hand.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	

	not applicable	
Parent follows the "Pause" instruction in the manual. For example, "I'm going to name some things that are (pause) DIFFERENT."	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent responds if a rule is broken during the lesson, reminding the child. "I need to hear you say the word clearly with your hand away from your mouth. Now let's do that row again." And later on, "I like the way you're saying the word so clearly."	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent attends to the "Repeat until firm" instruction. If the child makes a weak response, the parent does the task again, making sure he is FIRM before going on.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent makes use of delayed tests to check-on and to firm-up items that were weak earlier. "Let's do those *ain* words again. They're hard. But we can do it."	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent employs the designated "Error Correction" procedure.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent corrects every error immediately, not waiting for the child to self-correct.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent does the corrections quickly and with good humour - without any signs of frustration.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent is able to present the tasks without sounding-out errors, or other conspicuous errors. *Sounding out* and *saying it the fast way* are well modelled.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	
Parent accurately measures student's rate and accuracy in the "Reading Checkouts".	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening not applicable	
Parent puts some vim, vigour and enthusiasm into the presentation.	4. consistently well done 3. mostly well done 2. uneven 1. mostly not happening	

Total: Add the numbers in the middle column to obtain the maximum available score (M). Add the numbers in the last column to obtain the total score achieved (A). Divide M by A and multiply by 100 to establish the Tutor Mastery Score (PMS). The aim is to achieve a Mastery Score above 90% (SRA, 2001).

Reference: SRA/McGraw-Hill (2001, May). Corrective Reading: Decoding and Comprehension Trainer's Guide. USA: SRA/McGraw-Hill South East Region.

Figure 3

Parent Information sheet:

- Read the instructions about how the program is designed and how to present the program
- Read Lesson 1 several times until you are reasonably confident about presenting it smoothly
- Present Lesson 1 several times to your partner during the week, trying to present it smoothly
- Do not present Lesson 1 to your child during this week
- List any questions you have for the next session
- Remember the importance of: sticking to the scripts every lesson
- Discuss the points system and whether it's required in this situation - usually only necessary if the child is reluctant
- Note which segments are unnecessary in 1:1 format, because they were designed to facilitate group instruction
- Remember importance of doing "endings build-up" correctly. That is, use a format that is erasable - whiteboard, blackboard, overhead transparency overlaid on a paper page (not ink on a page - the erasure of part of a word is important to direct attention to the similarities between different words
- Remember to practise the Correction Procedures
- Remember the need to instantly correct all errors, not waiting for your child to self-correct
- Note the requirement to return to the first word in a line, column or sentence following an error. Remember to "repeat until firm"
- Remember that discomfort is normal for the new presenters (even teachers need 20 lessons to feel comfortable)
- Decide whether signals are necessary - usually based upon whether a child is inclined to respond too slowly
- Remember the importance of reasonably rapid pacing of lessons
- Remember the rationale for the focus on sound combinations, especially in the middle of words - explain how they are the last skills to develop
- Remember the "Reading Checkouts" and particularly the timed checkout.
- Fill in the Corrective Reading Program RMIT sheet that enables you to maintain records of progress for discussion with clinician during the program
- Don't forget the mid and end-of-program Mastery Tests.

Figure 4
The following contains sections of the sheets that are used to collect data, reported weekly/fortnightly by phone from parents, to ensure that student progress is being maintained.

Corrective Reading program: Level A (Lessons 1-35)

Free Reading	Lesson Number	Date	Lesson Time	Errors in reading	Comments (e.g. difficulties, common reading errors, breakthroughs)
Targe				**1**	**1 error is the target for all checkouts up to Lesson 4**
	1				
	2				
	3				
	4				

Corrective Reading program: Level B1 (Lessons 36-60)

Free Reading Time	Lesson Number	Date	Lesson How Long?	Errors First Reading	Errors Timed Reading	Words read in 1 min	Comments (e.g. difficulties, reading breakthroughs)
Target				**2 or less**	**3 or less**	**80**	
	36						
	37						
	38						
	39						

Corrective Reading program: B2 (Lessons 1-35)

Free Reading Time	Lesson Number	Date	Lesson How Long?	Errors First Reading	Errors Timed Reading	Words read in 1 min	Comments (e.g. difficulties, reading breakthroughs)
Targe				**2 or**	**3 or less**	**90**	
	1						
	2						
	3						
	4						
	5						

Corrective Reading Program: Level C (Lessons 1-30)

Free Reading Time	Lesson Number	Date	Lesson How Long?	Errors in Timed Reading	Words read in 2 min	Comments (e.g. difficulties, reading breakthroughs)
Targe t				**4 or less**	**200**	
	1					
	2					
	3					
	4					

Figure 5

Your child has been participating in a special reading program, and we would like to find out how useful it has been. We are particularly interested to learn whether you have noticed any changes in your child's reading. We would appreciate your help in filling out this form, and returning it to us as soon as is convenient.

Please *underline* the words that best describe your child's current reading.

In terms of the amount of reading done at home, my child is now reading *much more than   a little more than   the same as   less than*   before the program's introduction.

If you have noticed an increase, what type(s) of reading materials does your child favour?

In terms of the skill of reading done at home, my child is now *reading much better than   better than   the same as   worse than*   before the program's introduction.

If you have noticed a skill improvement, is it in *speed,   accuracy,   smoothness,   preparedness to read out loud   understanding of what is read*?
(You may underline any number of these words.)

In terms of the enjoyment of reading done at home, my child now seems to find reading   *much more enjoyable than   more enjoyable than   the same as   less enjoyable than*   before the program's introduction.

Do you have any other comments that you think might be helpful to future planning? Please write them below.

Figure 6: Repeated Reading Program Rules
INSTRUCTIONS: **Conduct the Corrective Reading program lesson as per usual. If the student has not read the required number of words per minute and/or has surpassed the permissible number of errors for the lesson, implement repeated reading, following the rules specified below:**

Student has not satisfied error and words read per minute criteria for a given lesson

Repeat the timed reading component of the current lesson, a maximum of 3 times on the same day as the lesson, until both error and words read per minute criteria are satisfied

Error and words per minute criteria satisfied during Timed Reading

YES   NO

Proceed to next lesson

Continue repeated reading of the timed reading component on the following day, a maximum of 3 more times

Error and words per minute criteria satisfied during Timed Reading

Yes   No

Proceed to next lesson

Repeat entire lesson (including Timed Reading component) until criteria satisfied