The Emperor Has No Clothes! Unanswered Questions and Concerns on the Response To Intervention Procedure

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Abstract

Recent legislation offers the option of using a response to intervention (RTI) procedure for documenting a learning disability. While we generally support the use of response to intervention procedures for eligibility determinations, there are many unanswered questions on implementation of this procedure as well as some question as to the overall efficacy of this procedure when used as an eligibility tool. This article presents many of these issues, and suggests our recommendations as to the possible solutions.

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With the recent passage of the Individuals with Disabilities Education Improvement Act in December of 2004 the federal government officially allowed students to be classified as learning disabled based on documentation of how well they respond to educational interventions--a procedure commonly referred to as RTI (Fuchs & Fuchs, 2005; 2006; Gersten & Dimino, 2006; Marston, 2005; Scruggs & Mastropieri, 2002; Mastropieri & Scruggs, 2005). However, this RTI procedure has largely been untested for use in determining eligibility for learning disability services, though ample evidence exists for use of RTI as a progress monitoring tool for students with and without disabilities (Fuchs & Fuchs, 2005; 2006; Marston, 2003; Vaughn, Linan-Thompson, & Hickman, 2003; Vellutino, Scanlon, Sipay, Small, Chen, Pratt, & Denckla, 1996). Of course, it is not unheard of for federal initiatives to be proposed or even implemented without complete and through testing of the newly proposed procedure and this initiative seems similar in that regard. At the risk of being somewhat pedantic, we collectively have the sense of deja vu all over again, and thus, we wanted to present some unanswered questions for professional discussion.

The RTI approach to documenting a learning disability resulted from the general dissatisfaction with previous approaches to documenting learning disabilities, in particular a dissatisfaction with the discrepancy model in which a learning disability is documented by demonstrating a substantial difference between a child's cognitive level (using IQ scores) and his or her achievement (Gersten & Dimino, 2006; Kavale, Holdnack, & Mostert, 2006). Many policy makers believe that the discrepancy model results in over-identification of students with learning disabilities, thus increasing the overall costs of special education (Fuchs & Fuchs, 2006), and the unspoken hope is that RTI will reduce such over-identification. Other reasons for dissatisfaction with current eligibility procedures include inconsistency in definitions of learning disabilities from one state to another (Scruggs et al., 2002), and the tendency of discrepancy procedures to identify students as learning disabled who have merely been exposed to less than effective instructional procedures; Vellutino, Scanlon, Sipay, Small, Chen, Pratt, A. & Denckla, (1996) used the term instructionally disabled for children identified with a learning disability who merely received inadequate instruction.

In contrast to the discrepancy procedure used for identification of students with LD presently, the RTI procedure involves exposing a child to educational interventions and seeing how well he or she responds to that educational intervention (Kavale, Holdnack, & Mostert, 2006; Fuchs & Fuchs, 2006). More specifically, the RTI procedure involves actual implementation of several education intervention procedures which under normal conditions, would be expected to result in reasonable academic growth. In the absence of such academic growth, a learning disability is assumed to exist. Proponents of the RTI approach suggest that RTI will result in a tightening of the eligibility procedures for documenting a learning disability, and thus, a reduction in the number of students labeled as LD (Fuchs & Fuchs, 2005; 2006; Marston, 2003; Vaughn, et al., 2003; Vellutino et al., 1996).

The purpose of this paper is to present a series of unanswered questions about the response to intervention (RTI) procedure. We intend to present these questions, as well as several possible answers, based on extant writings in the field on RTI, as well as our observations on how well such untested federal initiatives have worked in the past. We note that we are not the only professionals concerned with the implementation of RTI (Gersten & Dimino, 2006; Kavale, Holdnack, & Mostert, 2006), and as concerned professionals in the field, we are not certain how exactly this procedure will work. Further, we are not at all certain that this procedure will accomplish what the proponents of RTI suggest i.e. create a more accurate system for identification of children with learning disabilities, and reduce overidentification. While we are not opposed to RTI in principle--indeed we see many benefits for this type of procedure--we do have serious concerns on how this might be implemented and what results such implementation may have on the children we all serve. The various headings below address different sets of issues, but we acknowledge that much overlap may exist, and that there are additional concerns that may not be addressed here.

Scruggs and his co-workers (2002) suggested that any alternative to the current diagnostic procedures must include certain criteria to be considered valid and be met with general acceptance. We present these points here, because we believe these questions can guide the thinking in the field and assist in consideration of how to implement RTI. The criteria include the following:

a) the procedures must address the multi-faceted nature of a learning disability
b) the procedures must be able to be administered across the age spectrum;
c) administrators of the procedures must be able to demonstrate technical adequacy of the procedure
d) the procedures must show a reduction in overidentification
e) the procedures must reduce inappropriate variability across state and local agencies
f) the procedures must identify students that meet the conceptualizations of learning disability

How Is RTI Supposed to Work?

In the professional literature on RTI (Fuchs & Fuchs, 2005; 2006; Marston, 2003; Vaughn, Linan-Thompson, & Hickman, 2003; Vellutino et al., 1996), a 3 tiered system involving several interventions is typically recommended as best practice. For example, the National Joint Committee on Learning Disabilities described a three tiered system of interventions (NCJLD, 2005) in which a child is exposed to a different, increasingly intensive educational intervention at each tier. Further, in the research literature an educational intervention procedure--referred to by some as the “standard treatment protocol” --has emerged as the method of choice for monitoring pupil progress in each tiered intervention (Fuchs & Fuchs, 2005; 2006; Gersten & Dimino, 2006; Marston, 2005; Mastropieri & Scruggs, 2005; Vaughn, Linan-Thompson, & Hickman, 2003; Vellutino et al., 1996).

In the first tier of the standard treatment protocol (i.e. the first intervention), the general education teacher, upon first suspecting a learning disability, would be expected to implement a scientifically validated reading curriculum, using the curriculum as it was designed to be used for a period of several weeks. The teacher would monitor that child's progress over that time period. Fuchs and Fuchs (2005) suggest monitoring on a weekly basis for tier one interventions. The teacher would then chart those academic scores of reading skill to present a picture of the child's learning in response to that educational intervention. For example, the data in **Figure 1** represents weekly progress monitoring for a student, Andre, in terms of learning new vocabulary terms. These data indicates that Andre did not progress in mastery of new words over a period of 8 weeks. Thus, he was not progressing in the first tier of the RTI process and, for that reason, he would be placed into a second tier intervention (See **Figure 1**)

Typically, tier two interventions involve a more intensive reading program for an additional period of several weeks. Fuchs and Fuchs (2005) suggest that in tier two the intervention should involve intensive small group instruction involving no more than an adult and two or three children. Various researchers have recommended different frequencies of time for progress monitoring; for example, Fuchs and Fuchs (2005) recommended weekly monitoring in tier two, while Vaughn and her colleagues (2003) recommended less frequent monitoring. In contrast, we recommend daily progress monitoring for the second tier intervention. We believe that daily progress monitoring is truly, the "best practice" today, because the literature on curriculum based measurement has documented that daily monitoring facilitates frequent instructional modifications by the teacher when these become necessary (Deno, 2003). Also, we hasten to point out that many curricula are structured to allow for daily monitoring of academic progress. **Figure 2** presents another progress monitoring chart on Andre's daily progress in the second tier intervention (See **Figure 2**).

One would hope that intensive interventions of this nature result in documented progress for most students. However, some students, such as Andre might not benefit even from these intensive interventions. Pending a lack of sufficient growth during the tier two intervention, the child's team would meet and consider placing the child in special education. This meeting, and subsequent educational treatments, would represent the third tier of the RTI process.

Of course, while documenting how a child responds to educational interventions should be routine in educational circles, the fact is such documentation is fairly rare, even in today's world of high stakes assessment. In many educational districts, yearly assessments of student progress represent the only documentation of academic growth. Clearly such assessments would not be appropriate for the RTI procedure, so in some ways, the RTI procedure involves creation of a progress monitoring system that has not been widely utilized before, at least in the general education classroom.

One concern involves the level of preparedness of general educators to document progress on target children this closely. In short, are general educators prepared to participate in progress monitoring for individual students, as required in tier one of the intervention? Clearly, this will require considerable professional development, not only for special educators, but for general educators as well, as has been recommended in the literature (Fuchs & Fuchs, 2006; 2005).

Prevalence of Learning Disabilities

One of the first questions on RTI is will it accomplish what proponents hope? Will implementation of RTI reduce over-identification, and tighten up the diagnostic procedures for LD? This question clearly strikes at the issue of prevalence of students with LD, and there has always been considerable debate concerning how many children are learning disabled.

Since the introduction of learning disability (LD) in the Education for All Handicapped Children Act (PL 94-142; 1975), prevalence rates have changed drastically. The population of individuals identified with LD has increased by 150% to 200% since its introduction in 1975 (U.S. Department of Education, 2000; Bradley, Danielson, Doolittle, 2005; Wagner & Garon, 1999), and prevalence figures now seem to hover between 2% and 8%. Based both on this variance from state to state, as well as on this drastic increase, Wong (1996) suggested that teachers may have included all students with learning difficulties under the label of LD, and not limited the LD diagnosis at all. Again, will the implementation of RTI decrease or increase the prevalence of students with LD?

In all of the discussions of prevalence, there appear to be three issues that affect the prevalence rate of LD; variability, conceptual problems and specificity. Each of these issues is discussed in turn.

Variability in Prevalence Rates

The variability in prevalence rates for LD ranges from a low of 2.10 % in Georgia to a high of 8.66% in Rhode Island (Coutinho, 1995; Finlan, 1992). Out of an estimated forty-five million students in the United States in 1995 this variance in prevalence can indicate a significant difference in the size of the LD population from state to state. Some have proposed that the implementation of response to intervention (RTI), will decrease some of the variability since RTI is based on scientifically validated educational curricula. As this perspective goes, regardless of the location of the students who are challenged by academic work, those students would be presented with data-based instruction which will determine eligibility. Thus, many proponents postulate that implementation of an RTI protocol, should stabilize the prevalence rate for LD, and decrease the size of the population identified as learning disabled, as well as eliminate problems in over-identification of students with LD.

However, this set of propositions is not at all certain. First, such standard treatment protocols have not been widely utilized as eligibility tools, and practitioners in the field cannot be certain how implementation of this concept will impact prevalence rater (Gersten & Dimino, 2006; Kavale, Holdnack, & Mostert, 2006). Next, we must note a phenomenon which as not been discussed previously in the RTI literature to our knowledge—the age of onset of LD.

For the last several decades, the bulk of students identified as learning disabled have been so identified at some point during their third or fourth grade year. Teachers in the recent past seemed to wish to "give the benefit of doubt" to students struggling with academic work in kindergarten, grade one, or grade two. However, under the RTI model, and given the emphasis in all of the available literature on phonologically based early-reading problems (see discussion of that point below), one may well assume that students who do not perform well on phonological exercises in kindergarten or rapid letter naming and word mastery in grades one and two might now be identified as learning disabled. In short, in the recent past, we've been identifying students in only during the last 10 years of a 13 year (Kindergarten through grade 12) public school period. However, under RTI, such identification is much more likely in all 13 of these public school years. This fact alone, may increase the number of students with LD overall. Further, the few studies that have used RTI as a way of determining eligibility has shown prevalence rates for learning disabilities that are at least as high or higher as current rates (Vaughn, 2003; O'Conner, 2003). Thus, there is some question on the proposition that RTI will decrease the prevalence of students with LD. The impact of RTI on over-identification is also still unknown.

Conceptual Problems in Definitions of LD

Kavale and Forness (2000) suggest that the principal cause for the high variability of prevalence rates among states is the absence of a standard definition to learning disability. In fact, many state definitions differ considerably from one another, and thus, a student may manifest a disability in one state and not in another, which in turn, can lead to differing prevalence rates among the states. Proponents of the RTI model this variability would be eliminated because students that fail to respond to interventions in one state will also be likely to fail to respond in another.

However, again, this is not certain. Given the wide variety of educational interventions that could be utilized in the RTI procedure, it might be possible for higher variability in prevalence rates to result from implementation of the RTI procedure. For example, some states might delineate exclusively phonologically based reading interventions as the only acceptable intervention for RTI utilization, whereas other states might allow for the use of any scientifically validated curriculum in any subject area (e.g. a direct instructional program in mathematics, or language arts, or perhaps even a scientifically validated computerized, social studies curriculum). Thus, this utilization of a wider range of acceptable curriculum for use in the RTI process could possibly result in a higher prevalence for LD in some states. It is not at all certain that shifting to an RTI procedure will reduce inter-state variability in prevalence rates.

Specificity of LD and Prevalence

For several decades now, researchers have suggested that individuals with learning disability can not be reliably distinguished from individuals with low achievement. Others have stated more specifically that students with reading disabilities can not be distinguished from generally poor readers (Algozzine, 1985; Ysseldyke, Algozzine, Shinn & McGue, 1982; Fletcher, Francis, Rourke, Shaywitz, 1992; Fletcher & Foorman, 1994; Spear-Swerling, 1999; Wagner et al., 1999). In one early study comparing low achievers to students identified with learning disabilities, Ysseldyke, Algozzine, Richey and Graden (1982) concluded that the two groups were psychometrically equivalent.

These results highlight one of the long-standing issues in learning disabilities—specificity of the learning disabilities construct, vs. low achieving students, vs. students with other disabilities. To be more pointed, how can we tell the difference between a child with a learning disability, a low achieving child and/or a child with emotional/behavioral problems and academic delay resulting from those behavior problems?

Proponents of RTI argue that implementation of RTI could assist in eliminating at least some of the specificity concerns, since RTI would probably allow the teacher to distinguish between a student with a learning disability and a student who was low achieving. Students who responded to the intensive interventions in tier one and two would, presumably be low achieving for some reason other than a learning disability. Thus, in this one area, RTI may hold the promise for addressing one of the oldest concerns in the field of learning disabilities.

However, this has yet to be established by research, and some research indicates that this assumption may likewise be wishful thinking. In one early study, RTI was shown to reduce the number of minority students referred to special education (Marsten, Muyskens, Lau & Canter, 2003). Yet in the same report, the authors noted that RTI was prone to systematic errors in identifying students with LD. Specifically those errors arose from the potential for RTI to identify students that are

generally low achievers, such as the environmentally disadvantaged, minority students and English Language Learners. Thus, it is by no means certain that RTI will result in improved diagnostic procedures.

Should RTI be the Sole Criteria of a Learning Disability?

As inidicated above, there is some question as to how RTI will impact prevalence of LD. In particular, it is not clear if the issue of over-identification will be adequately addressed using this procedure and we are not convinced that RTI will reduce inappropriate variability across state and local education agencies. For this reason, Scurggs and his co-workers (2002) suggested an alternative to the exclusive use or RTI—they recommend the use of RTI in combination with a discrepancy criteria. The RTI model would be used to distinguish between those responding and those not responding to research-based interventions, and the discrepancy procedure would likewise be used to eliminate students who are achieving commensurate with their potential. Under this proposal, when it is determined that the child is not responding to interventions both psychological/IQ and achievement tests would be administered to the child to determine if a discrepancy exists. If a discrepancy exists at a predetermined level the information on the child would then be submitted to a referral team to decide on placement and educational setting issues. If a student does not have the predetermined discrepancy then the child would not be considered learning disabled. Of course, there should be some form of education support for those students other than services as learning disabled (Scruggs et al, 2002).

Initially, this combination approach has some appeal. One strength of this dual model for diagnosis is the fact that valid evidence-based instruction is provided to all students before any eligibility determination is made. This ensures that students are given sound instruction and any lack of achievement is due to a disability within the student and not the instructional procedures. Although it is hoped by professionals, as well as mandated by law, that every student be given good instruction, the fact is there is no federal or state system in place that we are aware of that allows for documentation of "effective instruction." Vellutino and his colleagues (1996), used the term "instructionally disadvantaged" to represent the students who may have received less than effective instruction, resulting in a classification as learning disabled. Thus, any procedure such as RTI which facilitates improved instruction and progress monitoring for students holds some appeal for concerned professionals.

Another strength of this dual approach involves the distinction between students with a learning disability and "slow learners" who may have a lower than average IQ. Presumably students with an IQ in the range of 70 to 85 would be somewhat less responsive to instruction than students with and IQ over 85, and coupling RTI with the discrepancy procedures currently in place would prevent those students with the lower IQ from becoming labeled as learning disabled.

Some estimates of the "slow learner" population suggest that around 15% of the total population may be slower learners (Scruggs et al, 2002), and this is almost twice the rate of LD even the "highest LD prevalence" states. Clearly, if that group were identified as LD, and were thus allowed to "drain" resources intended for students with learning disabilities, school districts nationwide would have serious concerns. Of course, many students with lower IQs would respond to instruction, and would not therefore drain the federal and state budgets for students with learning disabilities. However, it is uncertain how the RTI procedure, when utilized alone, would deal with these "slow learners."

Is RTI New?

While response to instruction for documentation of a learning disability has been discussed at least since the report of the Presidential Commission on Excellence in Special Education in 2001, only some 18 months ago was the legislation passed which allowed the use of RTI as an eligibility procedure (Marston, 2003). This is not the first time such untested legislative mandates have emerged from on high, and it probably won't be the last. However, it may assist us to consider other top-down efforts to implement rigorous progress monitoring for students who are struggling in school. Perhaps comparisons of this nature can guide us at this point, or at least inform us of the likelihood of success of RTI.

One comparison of these federal legislative mandates on enhancing instruction involves the relationship between RTI and various interventions which are currently required prior to identification. Gersten and Dimino (2006) previously described the apparent similarity between RTI procedures and the pre-referral interventions which have been required since the late 1980s for all students with special needs. As these authors indicate, pre-referral interventions have proven to be significant challenges to many general education teachers, and in many cases pre-referral procedures seem to be merely a checklist of normal teaching tactics rather than an individual pre-referral intervention. In many instances, we find that the only documentation that pre-referral interventions were undertaken at all is a one page check-off sheet indicating that a teacher has implemented a token economy, or a behavioral contract, or some other such intervention.

In our experience, when one requests to see a behavioral chart representing documentation of how well the child responded to the pre-referral interventions, one is most frequently met with blank stares; often the one-page check-off sheet is handed back to the questioner for further perusal. This may suggest that teachers in our nation have become highly skilled at planning pre-referral interventions, or completing forms to indicate that such interventions have indeed been implemented. However, actually conducting such interventions and monitoring a pupil's progress throughout them is somewhat less frequent.

More recently, behavioral improvement plans have been required legislatively for many students with special needs. One might well expect that, given the recency of this initiative dating from the late 1990s, teachers are somewhat better prepared to implement rigorous interventions in the general education classroom and/or the special education classroom and monitor student progress on those interventions to curb undesirable behaviors. However, our experience tells us that many behavioral improvement plans, like the pre-referral interventions mentioned above, result in a one or two page statement of intention (i.e. a plan) but no charted data on how a child responded to the intervention. Like Gersten and Dimino (2006) in their discussion of pre-referral interventions, we simply don't see that behavioral improvement plans are being implemented with rigor, or that progress towards reduction of problematic behaviors is being monitored in any systematic fashion in most schools.

Of course, this forces the question, even with this new legislation in place, will teachers implement these tier one or tier two interventions, and will they monitor the progress of the students with rigor? The answer to that question is not certain, but we would suggest that the pre-referral and behavioral improvement plan experience might provide guidance toward the answer; if so, then the answer is not positive on the prospects of RTI actually being implemented rigorously.

In a related question, we should consider the relationship between these required interventions. Specifically, will the tier one interventions described above as the first step in the RTI procedure replace the current requirement for pre-referral interventions for students suspected of demonstrating a learning disability, since both of these interventions take place in the general education classroom? We have heard some school administrators indicate "yes" and others "no" to that question. One school administrator even suggested the possibility of using current state and/or federal programs in reading instruction (e.g. Title One programs, as one example), as the tier one intervention in the RTI process. Does this suggest that every student who does not progress in a Title One program may be considered for a learning disability? What, indeed is the relationship between these various non-special education intervention procedures, and will these meet the requirements of either tier one or tier two interventions under RTI?

While the questions posed above have not been discussed in the field, as yet, we can suggest one possible answer. Historically, special education has been reluctant to utilize existing procedures for documentation of special services. As one example, special education has not generally recognized the use of group administered assessments that were administered to every child, but rather, has insisted on individually administered assessments for documentation of eligibility decisions. We would recommend the same principle here. In short, we believe that, in moving toward implementation of RTI, we should require teachers to implement rigorous instruction using scientifically validated instructional procedures, and that utilization of instructional data that is generated for all students in the class not be utilized in the RTI process, except as the initial screening measure. Alternatively, if the multiple educational interventions required in both tier one and tier two under RTI prove too costly (in either time or money), we would recommend that interventions which are routinely conducted in the general education or federally funded basic skills programs be used exclusively as tier one interventions, but not be considered acceptable as tier two interventions. We believe that tier two interventions, if not both tier one and tier two, should be exclusively related to the child in question, and thus we hope to encourage the teacher to concentrate on the issue at hand, and to implement that intervention with integrity and instructional validity.

Specifying Appropriate Responsiveness to Instruction

One of the many unanswered questions regarding RTI is how to best determine the appropriate level of responsiveness to instruction. In short, how much learning is considered adequate progress for a particular child? Thus far, researchers have not adequately addressed this vitally important question.

One possible solution for determining the appropriate level of response is to use a teaching method called Precision Teaching (PT). Precision Teaching has been used to facilitate progress for a wide range of learners from those with severe handicaps to graduate students (White, 1986), and it can provide the teacher with a quick, yet constant and precise measure of the skill acquisition of each child (Johnson & Brothen, 1975). Precision Teaching allows learning to be measured through a systematic use of recording devices, such as daily celeration charts, on which student responses are plotted (Keel, Dangel, & Owens, 1999). Probes or task sheets are used to monitor target skills daily. In one early intervention study on RTI, Vaughn et al. (2003) utilized a reading posttest as the measure of how well a student responded to intervention. While that early study was certainly a benefit to our understanding of RTI, we would propose that such one-shot performance measures not be used for performance monitoring in RTI. Unlike standardized tests which only test a small sample of skills, PT provides a direct measure of performance by using frequency of response to measure the number or correct and incorrect responses in a specific time period (typically a one-minute period).

Tier two of RTI (Fuchs & Fuchs, 2005) requires implementing a scientifically validated curriculum resulting in the standard tutoring protocol. However, we would suggest that instead of a scientifically validated curriculum, why not require implementation of a scientifically validated "instructional procedure" such as PT? Using a validated instructional strategy such as PT can result in the same goal--increased achievement—and doesn't tie any teacher's hands in terms of what curriculum to utilize.

For example, **Figure 3** and **Figure 4** show data collected over a 30-day period in a middle school math class where PT was implemented. Daily one-minute probes were used for 2-digit by 2-digit multiplication and 2-digit by 3-digit multiplication problems. Each day the student received 10 minutes of direct instruction before completing their 10-question probe. Using the median of the class scores for each probe sheet (10 correct responses), the teacher could quickly set aims for the student.

Day one of implementation of 2-digit by 2-digit multiplication the student scored 6 correct responses. Day 12 of intervention, the student scored 10 correct responses in a one-minute period. On day 13, 2-digit by 3-digit multiplication was introduced; the student scored 5 correct responses. Seventeen days later the student's number of correct responses increased to 9 correct responses per minute. The acceleration shown on the chart indicates that the student's number of correct responses increased over a period of 30 days. Thus, this student responded to intervention and reached the average level of achievement consistent with the achievement of his/her peers. Precision teaching also includes documentation of appropriate levels of academic growth. For example, the Basic Skills Curriculum available from Sopris West, Longmont, CO, is a precision teaching curriculum which involves daily data collection, and options for daily charting in virtually every basic skill area across the elementary grades (See **Figure 3** and **Figure 4**)

If general educators are going to be held accountable for implementing RTI in their classrooms, PT should be considered as a possible standard protocol for instruction in Tiers 2 and 3 of RTI. Most curricula are currently set up to facilitate PT principles such as daily progress monitoring; in short, most computer based curricula automatically monitor progress via click and print charts on daily performance. While some researchers (Fuchs & Fuchs, 2005; Vaughn et al., 2003) propose monitoring progress weekly or less frequently, we recommend setting a higher standard for best practice by requiring teachers to keep a daily data chart such as that used in PT. Indeed, in this day and age, why would we set a standard for best practice that is less than the best practice available? One cannot monitor academic progress more accurately than daily monitoring (Deno, 2003), and PT allows for and facilitates such monitoring. Thus, we strongly feel that the field should opt for daily progress monitoring, at least in tier two and higher.

There is an additional advantage for use of PT as the basic model for RTI. To date, the majority of research done on RTI is limited to reading intervention studies done with children in grades K-3. There are only limited data available to indicate the effects of using RTI in math or in reading interventions with students above grade 3. However, in the field practitioners may face the necessity, at least on occasion, to implement RTI for students in higher grades. Specifically, students in middle school and high school also have difficulties with basic reading and math skills and need to be identified in order to receive services/intervention. RTI interventions must not be limited to those that are geared only towards the early grades; they must include methods that can work at any age, any level, and with varying types of disabilities, so that secondary students and students with disabilities in mathematics, language arts and/or other subjects are not overlooked. PT provides one option for implementation of RTI across the grade levels, and in varied curricular areas.

As an example, the second author used PT methods in a 9th grade World History inclusion classroom. Students were given multiple choice/matching tests at the end of each chapter. Teaching probes which presented factual questions from the class were used with each unit (e.g. River Civilizations, Ancient Egypt) to help students break down information into chunks and commit it to memory. The probe sheet, presented in **Figure 5**, consisted of 16 fill in the blank questions. Sixteen blank corresponding blocks were placed on the back so students could write down the answers from the questions on the front. Students were then given blank probes throughout the week and a one-minute period to see how many they could answer correctly (See **Figure 5**)

Data for Melissa were collected and charted, since Melissa had demonstrated difficulties in previous grades. As the data in **Figure 6** shows, the PT probes were highly effective, and Melissa's chart showed considerable growth in this secondary subject area. Here, these tier one data demonstrate that Melissa could profit from effective instruction in secondary social studies, and thus, even though she demonstrated an ability/achievement discrepancy, she would not be considered for services as LD using this method for RTI. Overall, in this particular class, the over 90% of students with and without disabilities correctly answered the multiple-choice questions from the probe sheets on their unit test. Thus, these data indicate that such PT based instruction could serve as an effective tier one intervention in the general education classroom in a secondary subject area (See **Figure 6**)

We should point out that the implementation of precision teaching principles has been a growing phenomenon in special education, though the term "precision teaching" has not been widely utilized recently. Instead many of the principles of precision teaching are currently embodied in curriculum based measurement procedures which, over the last 30 years, have been widely studied (Deno, 2003; Lembke & Foegen, 2006). Research has documented the technical adequacy of this type of progress monitoring, as well as the efficiency of curriculum based measurements for classroom settings (Deno, 2003; Lembke & Foegen, 2006). Further, curriculum based measurement has been employed as both a screening tool--to identify students who may required special assistance—and a pre-referral intervention procedure. For purposes of RTI implementation, we believe that precision teaching methods, as embodied in the current emphasis on curriculum based measurement, will be the best option for appropriately monitoring pupil response to interventions.

LD on Monday and Not on Tuesday

One additional concern on RTI implementation involves the question of who is likely to be identified as having a learning disability using RTI. Will the group of students identified using RTI be different from the group of students currently identified using the discrepancy practice, as some have suggested (Coutinho, 1995)? In particular, we believe that we can identify several groups of students whose status may change as a result of RTI, and this raises the question, can a student have a learning disability one day and not have one the next?

First, under current practice one child that is frequently identified with learning disabilities is the gifted child with learning disabilities. Typically this child would have an IQ in excess of 130 (i.e. which would be two standard deviations above the norm on traditional assessments of IQ), whereas his or her achievement would be significantly below that (e.g. a standardized score on reading or math of 108 on a mathematically comparable scale). We might wish to ask, what is likely to happen to this child under RTI provisions?

Given that child's IQ is quite high, and his/her reading performance is slightly above grade level, we would anticipate that this gifted LD child would fail to meet the criteria of non-responsiveness to instruction under the new RTI provision. In short, that child is likely to respond to instruction to some degree, though he or she may not respond to instruction at a level commensurate with his or her IQ. Do we, as a field, intend to stop serving gifted students with learning disabilities altogether, and would that not be one predictable result of instituting RTI?

A second group of students that are currently identified as learning disabilities who might be at risk for exclusion under RTI provisions is the group currently identified as non-verbal LD. Rourke and his colleagues (Rourke, 2005; Rourke, Ahmad, Collins, Hayman-Abello, Hayman-Abello, & Warriner, 2002) have suggested that various brain imaging techniques have progressed to the point from which learning disabilities may be identified by using these newly developed techniques (Rourke, van der Vlugt, & Rourke, 2002). While historically, an assumption was made that learning disabilities were based on some unspecified dysfunction in the brain these researchers suggest that, using the modern brain study technologies such as fMRIs, we can now document these brain dysfunctions (Rourke, 2005).

Specifically, Rourke and his colleagues (Rourke, 2005; Rourke, Ahmad, Collins, Hayman-Abello, Hayman-Abello, & Warriner, 2002) have proposed two subtypes of learning disabilities, including (1) basic phonological processing disabilities, and (2) non-verbal LD. Given that almost all research on RTI has been implemented with students who have basic phonological processing difficulties, one may well assume that the newly proposed RTI procedures would adequately identify those students at least from Kindergarten up to grade 3. However, what is to become of students with non-verbal learning disabilities?

Non-verbal learning disabilities are characterized by several factors including, well developed single word reading/spelling processing, efficient use of verbal information in social situations, onset of disability symptoms after the age of 4 years, excessive hyperactivity after 4 years, decreases in hyperactivity over the next decade of life, possible withdrawal, anxiety, depression, and/or social skill deficits in adolescence. Further, this type of learning disability is notably different from the phonologically based learning disability. For example, the spelling errors of students with nonverbal learning disabilities are almost always phonetically accurate, whereas misspellings of students with phonologically based learning disabilities are frequently phonetically inaccurate (Rourke, 2005). Based on these initial findings, differential educational intervention options may be called for for these two different types of learning disabilities. However, for our purposes here, the question must be asked; do we intend to terminate services to this group of students with non-verbal LD, if as anticipated, their tier one and tier two interventions show progress in reading? Again, these students have a learning disability under the present guidelines, but may not demonstrate such a disability under RTI.

Finally, we have an addition concern about the students described above as "slow learners." This group is not currently served under the "learning disabilities" disability, but we suspect that the RTI procedure might open that door. Generally students with IQs between 70 and 85 have not been considered learning disabled since one criteria for LD was "normal intelligence." Therefore, these students have in most school districts, not been eligible for services. However, if we terminate use of IQ scores, and consider how learners in this ability range may respond to the first two tiers of intervention under RTI, it is quite possible that these learners will not progress at an appropriate learning rate. Are these students now to be considered as having a learning disability? In fact, has anyone addressed the question of continued use of the IQ cutoff score in the RTI procedure? Will IQ assessments even be administered using the RTI procedures?

Alternatively, are we going to apply the same exclusion criteria as previously (i.e. you must have an IQ of 85 or above to be LD), and merely overlay the added requirement of RTI interventions? Further, what will service of this group of students do to the prevalence estimates for LD?

When taken in mass, the questions above raise one scary possibility; it is possible that implementing RTI will result in highly selective provision of services, only for students with one type of learning disability (a phonologically based reading disability), while we begin to serve a large number of students with somewhat lower IQs, who have previously not been so identified. Do we intend, as a field, to "change out" the LD population entirely?

Conclusions

As we rush headlong into implementation of the RTI procedures which are now allowed under federal legislation, we have experienced a heartfelt desire to shout "Wait a minute. Is this Emperor's gown truly as radiant as others would suggest?" In other words, "Will RTI deliver as promised?"

We know that progress monitoring is effective as an instructional paradigm, and we applaud the effort to mandate enhanced instructional efficacy for students with learning disabilities. Still, there are these unanswered questions and concerns on the implementation of RTI, and to our knowledge many of these issues have not been raised previously, let alone addressed in thoughtful debate. Where possible, we have suggested procedures which we believe will increase the likelihood of successful implementation of RTI as an eligibility tool, and we have pointed out the advantages of RTI where we see positive benefit. However, the paucity of research on RTI and the use of RTI as an eligibility tool causes us considerable concern, and only through professional dialogue can concerned practitioners and researchers find a reasonable method to facilitate implementation.

In point of fact, we all are highly motivated to serve students with learning disabilities in the most effective way possible, and of course accuracy in identification is critical to that end. We sincerely hope these questions and potential solutions further that goal.

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Figure 1

Figure 1: Shows Andre as being non-responsive to Tier 1 intervention in learning new words after 8 weeks.

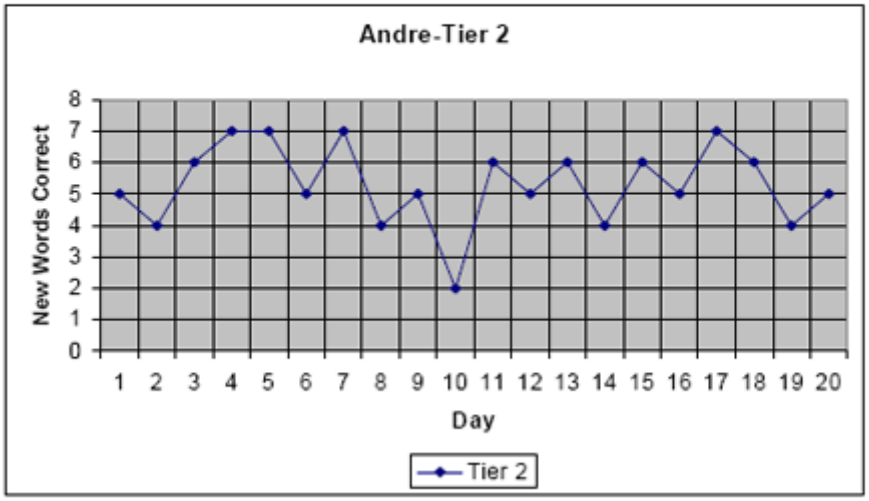

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Figure 2

Figure 2: Shows Andre as non-responsive to Tier 2 instruction after 4 weeks of daily progress monitoring.

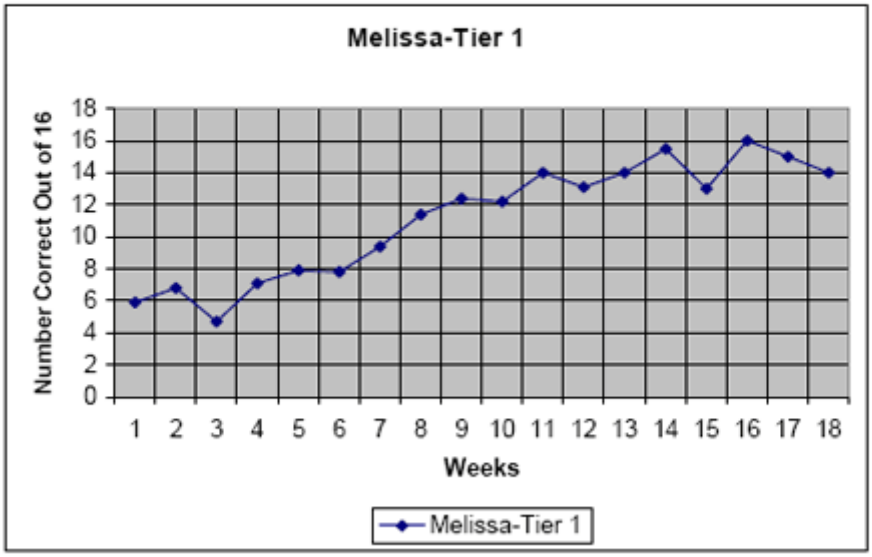

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Figure 3

Figure 3: Indicates progress in learning multiplication of 2 X 2 math problems using precision teaching.

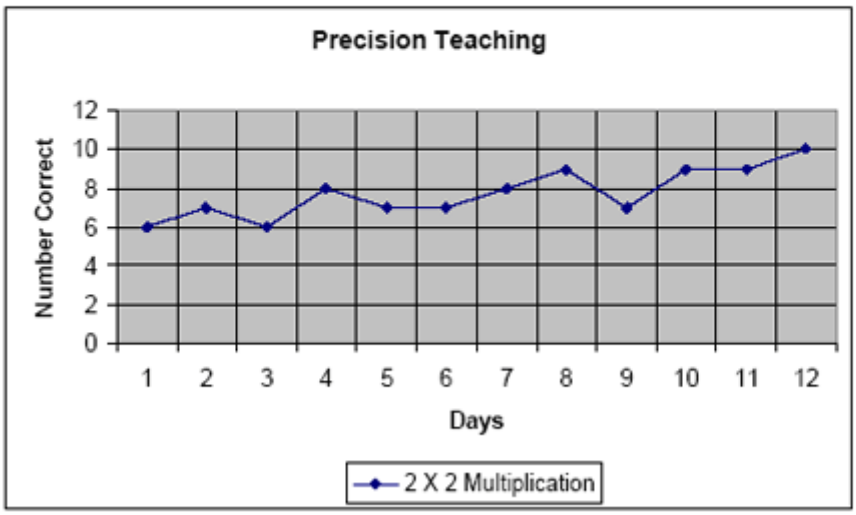

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Figure 4

Figure 4: Indicates progress in learning multiplication of 2 X 3 math problems using precision teaching.

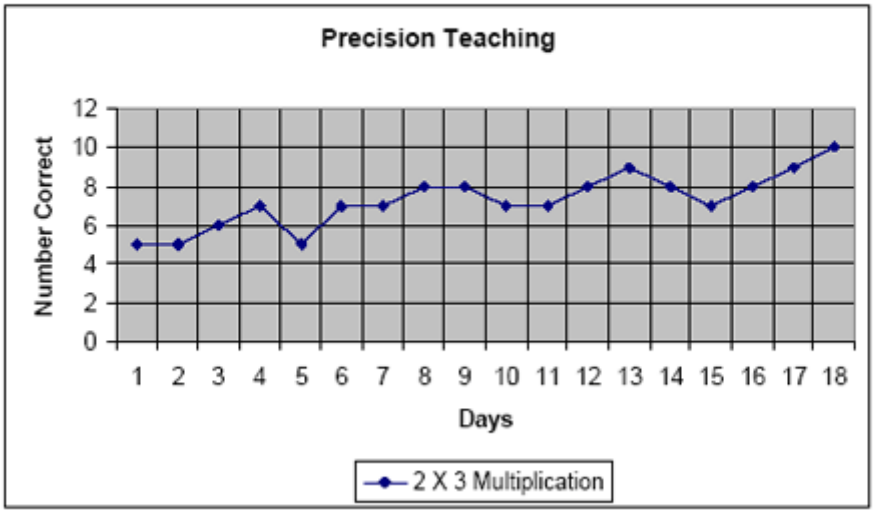

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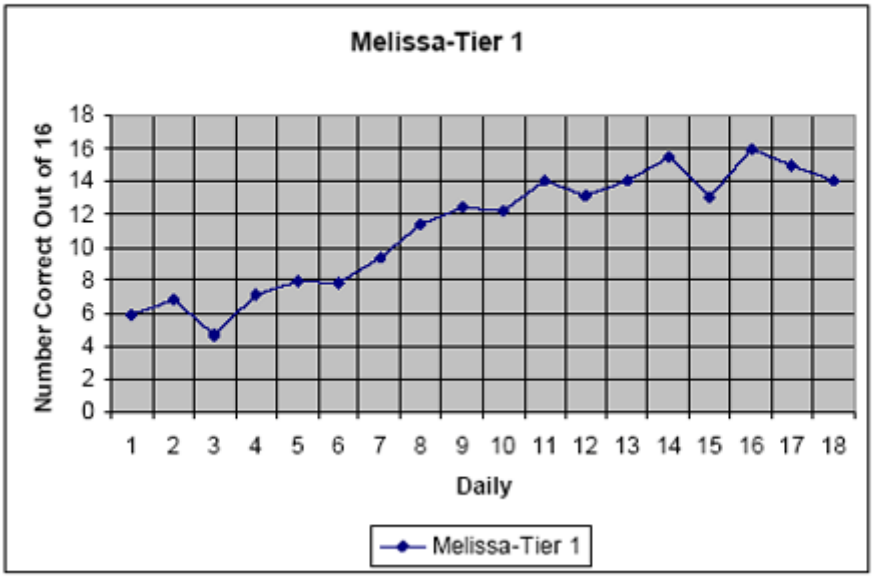
Figure 5

Figure 5: Example of probe sheet used during Tier 1 instruction in 9th grade World History classroom.

1. *Ziggurat is another name for _____.*
2. *The ruler of the Akkadians was _____.*
3. *The _____ were famous for the development of coins.*
4. *_____ is the lower part of Mesopotamia.*
5. *_____ was the leader of the Babylonians.*
6. *The Persians were great _____ builders.*
7. *Nebuchadnezzor was the leader of the _____ Empire.*
8. *_____ developed the idea of city-states.*
9. *The _____ main God was Marduk.*
10. *The _____ practiced human sacrifice.*
11. *The area around the Tigris and Euphrates Rivers is know as the _____.*
12. *The Tigris and Euphrates Rivers flow _____.*
13. *The Hebrews worshiped _____.*
14. *The _____ is another name for Hebrew scripture.*
15. *The _____, _____, and _____, lived in the western end of the Fertile Crescent.*
16. *_____ is where the 10 commandments were given.*

Figure 6

Figure 6: Shows progress made by Melissa using the probes sheets in a 9th grade inclusive World History classroom.



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