Response To Intervention

In [education](), **response to intervention** (commonly abbreviated RTI) is a method of academic intervention used in the United States to provide early, systematic assistance to children who are having difficulty learning. RTI seeks to prevent academic failure through early intervention, frequent progress measurement, and increasingly intensive research-based instructional interventions for children who continue to have difficulty.

In terms of identifying learning disabilities, the RTI method was developed as an alternative to the ability–achievement "discrepancy model," which requires children to exhibit a discrepancy between their ability (often measured by [IQ testing]()) and academic achievement (as measured by their grades and standardized testing). Proponents of RTI claim that the process brings more clarity to the Specific Learning Disability (SLD) category of the [Individuals with Disabilities Education Improvement Act]() (IDEA 2004), while opponents claim that RTI simply identifies low achieving students rather than students with learning disabilities.

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Description

RTI is a general education framework that involves research-based instruction and interventions, regular monitoring of student progress, and the subsequent use of these data over time to make educational decisions.[1][2][3] Key to the RTI process is the application of scientifically based interventions that have been demonstrated to work in [randomized controlled trials](). A goal of the RTI process is to apply accountability to educational program by focusing on programs that work rather than programs that simply look, sound, or feel good.

RTI follows a number of core assumptions:[1]

1. The educational system can effectively teach all children
2. Early intervention is critical to preventing problems from getting out of control
3. The implementation of a multi-tiered service delivery model is necessary
4. A problem solving model should be used to make decisions between tiers
5. Research based interventions should be implemented to the extent possible
6. Progress monitoring must be implemented to inform instruction
7. Data should drive decision making

A learning disability is defined as a neurological disorder that affects the brain's ability to receive, process, store, and respond to information. They are a group of disorders that can impact many areas of learning, including reading, writing, spelling, math, listening, and oral expression.[4]

In the process of identifying learning disabilities, RTI differs from the formerly standard "ability–achievement discrepancy" approach in that decisions are based on outcomes of targeted interventions rather than mathematical discrepancies between scores achieved on standardized assessments.

In the RTI process, service delivery is divided into three levels (tiers) of support, with the intensity of interventions increasing with each level.[2][5] **Tier 1** is focused specifically within the core curriculum, with instruction and interventions targeting all students. Approximately 80% to 85% of the general student body should be able to meet grade level norms without additional assistance beyond the first tier. Students who consistently do not perform within the expected level of performance through Tier 1 instruction are then provided with additional supplementary interventions at **Tier 2**, which typically involves small group instruction. Approximately 3% to 6% of students will continue to have difficulties after Tier 2 interventions; these students will then receive **Tier 3** intervention services, which is the most intense level of intervention (often one-on-one) provided in the regular education environment. As RTI is a regular education initiative, all three tiers of services are intended to be provided as supplements to, not replacements for, the regular education curriculum; there are some, however, who view Tier 3 as special education.[1][6]

School-wide screening

The first level of data collected in the RTI process comes from universal school-wide screenings. These screening assessments are typically given to all students within targeted grade levels, and cover basic academic subjects such as reading and mathematics. Most screening measures aim to be practical and efficient to administer, with the goal of identifying students who may require further assessments and interventions.

To evaluate student performance on the screening measures, scores are compared to specific criteria (*criterion referenced*) or to broad norms (*norm referenced*). When specific criteria are used, *cut scores* are established to evaluate students against a specific level of proficiency (e.g., achieving a score of 15 or above); in a normative comparison, students' scores are compared against those of a larger group (e.g., scoring above the 25th percentile compared to a national sample of 3rd grade students).

Screenings usually occur three times per year (fall, winter, and spring), and the data from these assessments help to guide instruction through the three tiers of the RTI process. This is important not only for identifying students who are having difficulties, but also for identifying possible areas of improvement in the general classroom instruction in the cases where too many students fall below expectations.[7] Because a single universal screening at the beginning of the year can over-identify students who require preventative intervention, the National Research Center on Learning Disabilities recommends that schools also integrate at least five weeks of weekly progress monitoring to identify students who require preventative intervention.[*citation needed*]

Teaching

Core curriculum in the classroom should be research-based and field tested. This means, based on evidence from congregating research, that the core curriculum contains all the fundamentals found necessary to efficiently teach reading and has a recognized record of achievement. Such curriculum is to be delivered by "highly qualified" teachers adequately trained to deliver the selected instruction as intended, that is, with fidelity to design.

Progress monitoring and tiered service delivery

Progress monitoring is a set of assessment procedures for determining the extent to which students are benefiting from classroom instruction and for monitoring effectiveness of curriculum.

Curriculum Based Measurement (CBM)[8] is often used to collect data on interventions and their effectiveness to determine what works best for an individual student. Additional methods are attempted until students "respond" to the intervention and improve their skills. Students that do not respond, or respond at significantly low rates, may be deemed to have biologically based learning disabilities, rather than simply learning difficulties.

Progress monitoring is the scientifically based practice of assessing students' academic performance on a regular basis for three purposes:

1. To determine whether children are profiting appropriately from the instructional program, including the curriculum
2. To build more effective programs for the children who do not benefit
3. To estimate rates of student improvement

Three tiers of Scientifically Research-Based Interventions (SRBIs) of increasing intensity incorporate the key components of RTI and help ensure the academic growth and achievement of students.

Tier 1

The first tier states that all students receive core classroom instruction that is differentiated and utilizes strategies and materials that are scientifically research-based. Assessment in the classroom should be ongoing and effective in that it clearly identifies the strengths and

weaknesses for each learner. Any necessary interventions at this level are within the framework of the general education classroom and can be in the form of differentiated instruction, small group review, or one-on-one remediation of a concept.

Progress monitoring in Tier 1 uses universal screening assessments to show individual student growth over time and to determine whether students are progressing as expected. In this process, data are collected, students are identified using benchmark scores, and measurable goals are set for the next data collection point for those who display difficulties. The team then follows a problem-solving process to determine interventions for at-risk students that will work within whole-class instructions. The classroom teacher implements the interventions, observations are conducted to ensure the fidelity of the classroom instruction, and the problem-solving team periodically reviews the progress of students.

Tier 2

In the second tier, supplemental interventions may occur within or outside of the general education classroom, and progress monitoring occurs at more frequent intervals. Core instruction is still delivered by the classroom teacher, but small groups of similar instructional levels may work together under a teacher's instruction and/or guidance. This type of targeted instruction is typically for 30 minutes per day, two to four days per week, for a minimum of nine weeks. This targeted instruction may occur in the general education setting or outside in a smaller group setting with a specialized teacher (such as a Literacy Support teacher for struggling readers).

In Tier 2, the main purpose of progress monitoring is to determine whether interventions are successful in helping students learn at an appropriate rate. Decision rules are created to determine when a student might no longer require extra interventions, when the interventions need to be changed, or when a student might be identified for special education.

Tier 3

Tier three is for students who require more intense, explicit and individualized instruction and have not shown sufficient response to Tier 1 and Tier 2 interventions. This type of targeted instruction is delivered for a minimum of two 30-minute sessions every week for nine to twelve weeks. The interventions in this tier may be similar to those in Tier 2 except that they are intensified in focus, frequency, and duration. The instruction in Tier 3 is typically delivered outside of the general education classroom. Programs, strategies, and procedures are designed and employed to supplement, enhance, and support Tier 1 and Tier 2 instruction by remediation of the relevant area and development of compensatory strategies. If Tier 3 is not successful, a child is considered for the first time as potentially having a learning disability.

In some cases, Tier 3 is considered to be special education, with instruction being provided to individual students or small groups by special education teachers *in place of* general education instruction (rather than as a supplement). Initial goals are established through an individualized education program (IEP), which is guided by the results of a comprehensive evaluation, and ongoing progress monitoring helps to direct the teaching process. Special education instruction likely will be considerably longer than the 10 to 12 weeks of supplemental instruction delivered

in Tier 2 and beyond. The frequency of special education instruction depends upon student need, and the criteria to exit special education are specified and monitored so that placement can be flexible.

Behavioral Aspects of RTI

RTI can also be implemented to support positive behavioral functioning through positive behavior interventions and support (PBIS) systems. PBIS is a framework that is used for assisting school personnel (e.g. principals, teachers) in implementing and organizing evidence-based behavioral interventions that enhances students' social behavior. PBIS utilizes the same principles that are characterized in academic RTI procedures: universal screening, progress monitoring, data-based decision making, and implementation of evidence-based interventions. Within each principle, students are taught effective strategies that are essential for supporting teaching and learning.

Tier One

Tier one is primarily based on prevention. At this level, school wide positive behavioral expectations and procedures are taught. PBIS consists of rules and routines that are developed and taught by school personnel (e.g. principals, teachers, school psychologists, counselors, etc.) to prevent initial incidences of behaviors presented by student the school would like to change. For example, a school team may determine that disrespect for self and others are behaviors they would like to see eliminated within their school. As a result, school staff targets the behavior by positively reframing disrespectful behaviors to respectful behavior as their behavioral expectation for students. Positive framing such as 'Be respectful, Be resourceful, and Be responsible' are expectations that can be utilized to promote positive social behavior.

Examples of tier one interventions:

-The Good Behavior Game

-Token Economies

Tier Two:

Tier two is designed to provide interventions to support students who are not responding to tier one prevention strategies. Therefore, tier two approaches offer more support than tier one interventions. Because fewer students require tier two services, students are at risk for engaging in more serious, problematic behaviors. Within tier two, simple functional behavioral assessment (FBA) are used to identify students' functioning to support individualized interventions and strategies. Students' individualized interventions are referred to as behavioral intervention plan (BIP). These two approaches are used to promote positive social interactions.

Examples of tier two interventions:

-Check-in, Check out plans (CICO)

- CICO is an effective behavioral education program (BEP) under Tier 2. It is effective because it is driven by data-based learning and educational psychology theories. Through CICO, students' behaviors are not just curtailed. These students are taught to rely on the school, their home, and themselves for support in obtaining their behavioral goals.

1) A student has behavior goals each day, established by the intervention team.[9]

2) An established and trained checker checks in and out with the student before and after school to assess his or her CICO card.[9]

3) Then, all of the student's teachers provide feedback regarding the student's behavioral goals after their class.[9]

4) When checking out with the checker, the student receives positive feedback regarding the completed goals for the day in the form of some positive reinforcement.[9]

5) Lastly, the child's home guardian (parent, etc.) signs the card each day after school which strengthens one of the most important aspects of education: home-school collaboration[9]

- Learning and Education Psychology Theories Tied to the CICO Process

1) **Self-monitoring**- Students are a part of this intervention to overcome their struggles and make good choices. Greater autonomy increases a student's positive behavior because the school and its educators have given this student confidence and control over his or her own behavior instead of just relying on strict discipline. Therefore, a self-monitoring environment is a safe environment for the student to choose to change his or her behavior. CICO can take regulatory strategies from this learning theory that is practiced in the general classroom. In the general classroom, to instill self-regulation strategies, which are needed for proper apprenticeship, teachers must include mini interventions within their curriculum to ensure that students know how to self-regulate. Since not all students adopt every strategy, it is important for teachers to identify a range of strategies that can be used for self-regulation within these interventions.[10]

2) **Scaffolding**- It helps students become more self-aware and have greater autonomy. A sense of teamwork and positive reinforcement increase the success of this scaffolding of behavior. In academics, scaffolding allows the student to retrieve prior knowledge while being encouraged to learn new information; therefore, prompts and hints instead of force-feeding facts allows the student to form a greater understanding of the material because they are conceptualizing on their own.[11] Scaffolding can apply to behavior too. This confidence that comes with more autonomy during the scaffolding-like process of CICO instigates an even greater desire to behave or learn new behavioral strategies.

-Behavioral Contracts

-Weekly Report Cards

-Implementations of group therapy sessions

-Implementations of social groups

Tier Three

Tier three was designed for students who did not respond to tier two services. As a result, tier three strategies are more intensive in delivery. Within tier three, educators conduct intensive functional behavioral assessment (FBA) for students in which the results of the assessment are used to compose behavior intervention plans (BIP) for the student. Instructions and expectations should be designed to meet the specific need(s) of students so they can build strategies that exhibit positive behaviors. To aid students throughout this process, educators should use various evidence-based interventions when intervening with the students' behavior.

Examples of tier three interventions:

-Individual therapy sessions

-Implementations of self-monitoring skills

-Daily Behavior Report Cards

-Modified Check-in, Check out plans

Tier	Core Instruction	All Students
Tier 1	Universal screening (3 times per year) Monthly progress monitoring	All students At-risk students (□25%)
Tier 2	Specialized interventions Weekly progress monitoring	□10–20% of students □10–20% of students
Tier 3	More intensive interventions and progress monitoring Special education referral	□5–10% of students □2–7% of students

This chart displays an RTI model that was completed in 47 of the 50 states. It shows the core components of the RTI model.[12]

Fidelity of implementation

In an RTI model, fidelity is important at both the school level (e.g., implementation of the process) and the teacher level (e.g., implementation of instruction). Although the concept of fidelity of implementation is supported by research and is generally viewed as common sense, there are practical challenges associated with achieving high levels of fidelity. Factors that can reduce fidelity when implementing instruction include:[13]

- Complexity of the interventions and the time required to implement them
- Inaccessibility of required materials and resources

- Low perceptions/expectations of effectiveness (teachers may not fully commit to an intervention if they believe that it will not be effective, or if it is inconsistent with their teaching style)
- Low numbers, expertise, and motivation of those who deliver the interventions

Classification of RTI

RTI is a component of general education, and is not by nature a special education pre-referral system.[14] In the educational literature, RTI is either referred to as a *Standard Protocol Approach* or as a *Problem Solving Model.*[15] Both models incorporate problem solving to identify the academic problem the student is having. The main difference among these approaches is that the former uses a systematic, universal screening procedure during Tier 1 to determine which students are having difficulties meeting age or grade level benchmarks for a specific skill. Typically, Curriculum Based Measurement (CBM) or other methods are used to flag the students who are not meeting expected levels of performance. In the problem solving model approach, the teacher typically refers the student to a student assistance team or multidisciplinary team to ascertain the challenges a student is having within the classroom. Using information collected from the classroom teacher, observations, etc., the team determines what additional supports the student might need to address the learning gap.

RTI provides an alternative or additional means of gathering information to be used when classifying students for special education. When a student is identified as having difficulties in school, a team provides interventions of increasing intensity to help the child catch up with the rest of his or her peers. After interventions have been tried and proven ineffective, the child may then be referred for additional, special education services. While this can be a way to ensure that each student is afforded the opportunity to learn, some opponents feel that it can allow school districts to avoid or delay identifying students who need special education.

Support for RTI

RTI proponents claim that when interventions work, fewer children, particularly minority children, are referred for special education, and that the RTI model acts as a safeguard, insuring that a child is not given a label of a disability inappropriately. On the other hand, opponents claim RTI results in delays of services needed specialized instruction. RTI proponents state that RTI also helps school districts by eliminating unnecessary referrals, which drain time and resources.[16] Critics express concern, however, that in attempting to eliminate unnecessary referrals, RTI may also delay or eliminate necessary referrals.

Proponents feel that response to intervention is the best opportunity for giving all students the additional time and support needed to learn at high levels,[17] and see great benefit in that it applies to the classroom teachers, Para educators, counselors, and the administration. The RTI process can help identify students who are at-risk, guide adjustments to instruction, monitor student progress, and then make other recommendations as necessary. The objective is that with minor adjustments or simple interventions, students may respond and achieve at higher levels.

RTI is also very useful when interacting with students who have severe emotional problems. Response to intervention can help students with ED (Emotional Disturbance) as well as those with LD (Learning Disabilities). The structure and evaluation of RTI will help this particular group of students to be successful in the academic environment.[18]

Relationship between IDEA and RTI

The Individuals with Disabilities Education Act (IDEA) was revised and signed into law in 2004 and became effective in July 2006. According to the law, a specific learning disability is a disorder of one or more of the basic psychological processes that adversely affects academic achievement in one or more domains (e.g., reading, writing, math, language). There are three methods of SLD identification under IDEA, as defined in §300.8(c)(10) (OSERS Final Regulations-8/06):

1. a discrepancy between "ability" and "achievement"
2. failure to respond to scientific research-based intervention
3. alternative research-based procedures for determining whether a child has a specific learning disability

(The "third method" is often considered a "processing strengths and weaknesses" model.)

The 2004 reauthorization of IDEA makes mention of response to intervention as an optional method of part of the process of identifying LD:

1. In diagnosing learning disabilities, schools are no longer required to use the discrepancy model. The act states that, "a local educational agency shall not be required to take into consideration whether a child has a severe discrepancy between achievement and intellectual ability[…]"
2. Response to intervention is specifically mentioned in the regulations in conjunction with the identification of a specific learning disability. IDEA 2004 states, "a local educational agency may use a process that determines if the child responds to scientific, research-based intervention as a part of the evaluation procedures."
3. Early Intervening Services (EIS) are prominently mentioned in IDEA for the first time. These services are directed at interventions for students prior to referral in an attempt to avoid inappropriate classification, which proponents claim an RTI model does. IDEA now authorizes the use of up to 15% of IDEA allocated funds for EIS.[19]

RTI was included in the regulations due to considerable concerns raised by both the House and Senate Committees regarding proponents of RTI claims about the use of IQ tests to identify learning disabled students. There was also recognition in these committees of a growing body of scientific research supporting methods of pre-referral interventions that resolved learning difficulties short of classification. However, the final regulations also allow a third method of SLD identification, often considered a processing strengths and weaknesses model.

The IDEA Committee Conference Report (CCR)[20] discusses the use of scientifically based early intervention programs, describes a model response-to-intervention program, and

recommends the development of the most effective implementation of responsiveness to intervention models. The report describes such a model as an essential service for reducing the need to label children as disabled.

Response to RTI

As RTI has recently entered U.S. schools, some teachers [*who?*] believe that it has brought about tension between regular education teachers and special education teachers. In other schools[*where?*], RTI has led to increased cooperation and understanding between regular education teachers and special education teachers.[*citation needed*] Regardless of teachers' responses, proponents of RTI claim that students are benefiting from the RTI process. Criticisms point to delays in identifying students needing special education (which was also a concern in a 2010 OSERS Memorandum[21]), difficulties in accurately determining the presence of a learning disability,[22] the amount of training needed by general education teachers, and the lack of resources devoted in most schools to all the technical requirements of RTI.[*citation needed*]

Great stress can be experienced by some educators who have little or no experience teaching students with learning disabilities, and who have difficulty meeting their needs in the classroom and searching for research-based ways to help them. RTI can require additional work for teachers, and a potentially significant change in expectations represents a great source of resistance toward RTI.[23]

One criticism of RTI is that while its core assumptions include "that the educational system can effectively teach all children," interpretations of the approach often do not account for gifted education. An inverted pyramid showing analogous increasing interventions for gifted children could be added to the model so that all children are addressed. A framework for such an approach has been developed by the Montana Office of Public Instruction.[24]

Concerns and criticisms of RTI for SLD classification[

Criticisms of the RTI model first surfaced in 2004 when IDEA indicated it as an alternative to ability–achievement discrepancy for SLD identification.[25] Some feel that RTI is valuable for prevention, but see little empirical support for using RTI to determine learning disabilities, and have concern that it could be used to delay or deny services to children with learning disabilities.[26] Some also argue that there are many unanswered questions about RTI implementation, and that proponents have tended to gloss over or ignore criticisms of the RTI approach.[27] Several major research efforts have supported these contentions through findings suggesting that RTI does not produce reliable sets of responders and non-responders.[28][29][30] If RTI does not produce reliable sets of responders/non-responders, it would be difficult to use this approach to determine learning disabilities.[31]

The final IDEA regulations published in 2006 included a "third method" for identifying learning disabilities,[32][33][34][35] which is often referred to as a "processing strengths and weaknesses" approach.[36] Surveys of practicing school psychologists have shown that the third method approach is gaining popularity in the United States.[37] Many academics, researchers, and lawyers

have also indicated a preference for this third method approach for identifying learning disabilities.[22]

In 2010, a 58-author "expert consensus" white paper pointed out significant limitations for both ability–achievement discrepancy and RTI in advocating for a third method approach.[22] Supported by the Learning Disabilities Association of America, this white paper concluded that:

1. The SLD definition should be maintained and the statutory requirements in SLD identification procedures should be strengthened
2. Neither ability–achievement discrepancy analysis nor failure to respond to intervention alone is sufficient for SLD identification
3. A "third method" approach that identifies a pattern of psychological processing strengths and deficits, and achievement deficits consistent with this pattern of processing deficits, makes the most empirical and clinical sense
4. An empirically validated RTI model could be used to prevent learning problems, but comprehensive evaluations should occur for SLD identification purposes, and children with SLD need individualized interventions based on specific learning needs, not merely more intense interventions
5. Assessment of cognitive and neuropsychological processes should be used for both SLD identification and intervention purposes.

Comprehensive evaluations in all areas of suspected disability are necessary according to IDEA and the U.S. Supreme Court conclusions in the *Forrest Grove v. T.A.* case, suggesting that cognitive and neuropsychological assessment may be necessary in many cases where this is a referral concern.[38] Many of those advocating this third method approach, recommend using a combination of RTI for prevention, and comprehensive cognitive assessment for children who do not RTI.[39]

Technology application to RTI

Technology is becoming increasingly important in improving instructional practices and student achievement. Tools that educators can utilize within their classrooms include weblogs, wikis, RSS aggregators, social bookmarking, online photo galleries, audio/visual casting, Twitter, and social networking sites.[40] Many of these tools can be used for team-based learning and in facilitating students' use of higher forms of thinking such as analysis, evaluation, and synthesis.[40]

Properly integrated technology can increase student learning in areas such as motivation, collaborative learning, critical thinking, and problem solving.[41] Some techniques that have been found to work in education include: identifying similarities and differences; summarizing and note taking; reinforcing effort and providing recognition; assigning homework and practice; utilizing graphic representations of concepts; cooperative learning; providing objectives and feedback; generating and testing hypotheses; providing cues and questions; and using advanced organizers.[42] Technology-rich environments can also be effective for at-risk students, and can motivate students to stay in school and hopefully lessen the achievement gap.[43]

Computer Assisted Instruction (CAI), has been studied for its effects on lower achieving students. The effectiveness has been attributed to it being non-judgmental and motivational, while giving immediate and frequent feedback, individualizing learning to meet the students' needs, allowing for more student autonomy, and providing multi-sensory components (Barley *et al.*, 2002, p. 97).[44] A review of 17 different studies found that CAI positively affected scores in mathematics and literacy for all grade levels and significantly improving scores for students labeled "at-risk" (Barley *et al.*, 2002, p. 105).[44]

Technology can also effectively help teach basic literacy skills such as phonemic awareness, alphabetic principle, word recognition, alliteration, and comprehension. Today the use of specialized educational software applications can help support and enhance students' literacy skills. Presentation software such as PowerPoint can be used to enhance young children learning experience. The use of pictures, colors, sounds, animation, slide designs, or slide transitions can be easily implemented into a literacy lesson, and such software has been used, for example, to help students with autism learn and respond to activity schedules.[45]

For young learners, the use of animation directs their attention to important features and prompts them to help ensure correct responses. Teachers can create literacy lessons with attention-grabbing elements such as moving graphic images. For example, a teacher might focus on the initial /d/ sound in the word "dog" as an instructional goal; a presentation slide for this would show a picture of a dog, and the teacher would select three possible letters to represent the initial sound in dog, such as /b/, /c/, and /d/. After showing the picture of the dog, and then displaying each of the three letter choices one-by-one, the teacher would ask the student what letter he or she thinks "dog" starts with.[46] Other types of presentation software for literacy instruction, such as Photo Story, can allow teachers to add a variety of special effects, soundtracks, captions, and their own voice narration to the photo stories.

See also

- Minimally invasive education
- Positive education

Further reading

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