The reauthorization of the Elementary and Secondary Education Act (ESEA) in 2002 expanded the state and district accountability for improving all schools and increasing the learning and achievement of all students, including those who struggle to master basic skills in reading and mathematics.

Moreover, in 2002 The President's Commission on Excellence in special-education recommended that special educators stop focusing on process and start emphasizing on outcomes. The Individuals with Disabilities Education Improvement Act (IDEIA) was reauthorized by Congress in 2004; the revised language introduced an alternative means of identifying a disability- "Response to Intervention"

If NCLB is responsible for setting high goals of improving outcomes of students with disabilities, then RTI is the strategy that can help states, and school districts meet NCLB goals by identifying struggling learners early in order to improve their educational outcomes.

Response to Intervention (RTI):

"All children can learn."

Education systems need to embrace this philosophy and embed it in their everyday teaching practices. Teaching all students requires a system for early identification of at-risk students and provide them with intensive intervention. RTI is the tool that allows application of this philosophy by helping students at risk of learning disabilities.

As per The National Centre for RTI (NCRTI, 2005), RTI tools allow schools to identify students 'at risk' of poor learning outcomes, monitor student-progress, and provide evidence-based interventions. It does not wait until students fail, and helps the at-risk students by pre-referral prevention and intervention. RTI allows early and intensive interventions based on students' learning characteristics such as student-receptivity. Efficient and research-based RTI programs have reduced the number of students in special-education programs drastically.

This document describes Response to Intervention (RTI), its core principles, components and the popular models of RTI. In this document, we also discuss why RTI is better than the discrepancy model. In the second section of this paper, we explore one of the educational programs, PracTutor, in terms of RTI fundamentals and components, and scrutinize its design in congruency with RTI principles.

PracTutor is a web-based Math and Language Arts mastery learning program that combines rich environment for active learning (REAL) fundamentals within an RTI framework to help every student master Math and Language Arts. It is a tool that provides all students with high-quality instructions and assessments to master Math and Language Arts. By providing each student with a personalized environment to learn, PracTutor allows students to receive help far before they develop a learning-deficiency. Its adaptation of the three-tier RTI approach in its standard teaching environment, benefits the at-risk students to meet their goals even before a formal RTI program kicks in.

The goal of this paper is to understand how teachers can respond to the learning difficulties of at-risk students sooner in the learning cycle, and long before they develop disabilities that warrant their placement into special-education. Simultaneously, we would also analyze PracTutor functions with respect to the help that an RTI tool should render to teachers with the goal of achieving NCLB objectives.

RESPONSE TO INTERVENTION (RTI): THE TIERED MODEL OF INTERVENTION

NASDAE describes RTI as the practices that provide students with high-quality instruction and intervention based on students' academic or behavioral needs (NASDAE, 2005).

Response to Intervention is based on the principle that early intervention in the learning process can prevent a number of students from being tagged for special-education, and identify students who actually have learning-disabilities.

In the last few years, multi-tiered models, where students are provided with increased intensity of intervention, based upon their needs, have successfully sorted out the students who underperform, not because of a disability, but due to inadequate or ill-matched instructions, and helped them meet achievement goals.

Why Response to Intervention (RTI):

The traditional approach of special-education and student support is termed as the discrepancy model or the 'Wait to fail' model. Researchers have consistently found several inconsistencies in the 'Wait to fail' model. It failed to differentiate students with a learning disability from low-achieving students. Moreover, it couldn't be consistently implemented (Macmann, G. M., et al., 1989) and failed to help with instructional decisions (MacMillan, D. L., Gresham, F. M., & Bocian, K. M., 1998).

The history of student disability classification: The "Wait to fail" Model

As per the conventional approach, students with disabilities receive special-education services while their 'typical' peers learn in a regular education program. Students were referred for testing based on teacher's perception of student achievement. They were tested for disabilities using intelligence-tests and achievement-test scores. If students displayed a big difference between IQ and achievement scores (Ability-achievement discrepancy), they were labeled as eligible for special-education services. Unfortunately, a student could receive help only if they were labeled with a disability. In short, they had to wait till they failed the discrepancy test.

A great deal of research has challenged 'the discrepancy model' stating that:

1) Such placement showed no tangible benefits whatsoever for the students (Glass, G., 1983, p. 69).

2) It waits for students to fail (the Ability-achievement discrepancy) before they become eligible for special-education. As per, Donovan, M. S., & Cross, C. T.(2002), by the time these students fail they have developed learning discrepancies that leave them far behind their 'typical' peers.

3) An LD label based on the IQ/achievement discrepancy does not provide teachers with any instructionally useful information (Aaron, P. G., 1997).

Failure of Discrepancy model: Proof and support

Various studies found profound problems with the Discrepancy model

1) This research suggested that some children who truly needed help do not receive it, while other children who do get help don't really need it. In short, the school-teams often made inaccurate identifications (James B. Hale, 2008).

2) One study found that, under the old system, the number of students in the learning-disability (LD) category of special-education was growing exponentially (Macmillion, D.L., Grasam, F.M., & Bocian, K.M. 1998).

3) Doubts were also raised that the LD category was being used by schools to label students with low achievement and other behavior concerns against an actual discrepancy. (MacMillan, D. L., Gresham, F. M., & Bocian, K. M., 1998) Another research questioned the reliability of student identification using LD criteria (Macmann et al., 1989).

4) In their research work Macmillan and Speech(MacMillan D. L. & Speece D.L., 1999) raised doubts over, the weakness of IQ testing; and highlighted 1) the need to reduce over-identification; 2) inconsistency between school classification and state classification; 3) lack of validity for the IQ-achievement discrepancy.

Similarly, Dean, V. J., & Burns, M. K. (2002); Fuchs, D. (1996); Haight, S.L., Patricia, L.A., & Burns, M.K. (2001) also noticed several valid problems with the identification process of learning disabilities using the IQ-achievement Discrepancy model.

To summarize, researchers found that the Discrepancy model could not differentiate between students with disabilities from low-achieving students; lacked ample psychometric properties; could not be consistently implemented; and failed to help with instructional decisions (Stuebing, K, et al., 2002). These findings suggest that some criteria other than the IQ-achievement discrepancy should be used to identify students who may need special-education services.

RESPONSE TO INTERVENTION MODEL v/s DISCREPANCY MODEL

While the Discrepancy model focuses on the discrepancy between intellectual ability (IQ) and academic performance, the RTI model focuses on the discrepancy between student performance and benchmarks, as well as, pre-intervention and post-intervention levels of student performance.

RTI MODEL	DISCREPANCY MODEL
Early intervention	Wait to fail
Direct measurement of skills	Ability/Achievement model
Tiered intervention	Clear eligibility
Collaborative	Unalterable variables
Problem solving	Focus on labels
Data-driven decisions	Labels are arbitrarily assigned
Repetitive eligibility determination	Inconsistencies in eligibility determination
Focus on alterable variables	Tend to over-identify students as LD
Focus on improving instructions	Does not provide instructionally useful information

Advantages of RTI Model: Proof and support

1) Prevention programs are more effective than remediation programs, and can lower the number of students identified with special learning disorders significantly (Lyon, G. R. et al., 2001). Researchers estimate that the number of students identified with SLD can be reduced by 70%.

2) Preventive services provided through general-education are more cost efficient (Lyon, G. R. et al., 2001) as lesser funds are required for intervention as compared to the traditional approach, where we first conduct a determination program, and then provide intervention services through a special-education program.

3) Within the RTI framework, use of frequent progress monitoring allows professionals to make accurate decisions about students' academic development (NASDSE, 2006, pp. 5–6).

4) The general-education model has some advantage over special-education models of treatment, as it provides a full normative framework that can be used to make comparisons, and therefore provides some conceptual and measurement advantages. (Fuchs, L. S., 2003).

5) RTI models allow accurate identification of students in need of more intensive services (Case, L. P., Speece, D. L., & Molloy, D. E., 2003).

6) Intervention Responsive Assessments (IRA) can improve consequential and construct validity of identification decisions (Fuchs, L. S., 2003).

7) Formative evaluation procedures have significant positive effects on student achievement, and may be used to plan and modify personalized intervention programs. (Fuchs, L. S., & Fuchs, D., 1986).

Similarly, Barnett, D. W. et al (2004); Burns, M. K., & Senesac, B. K. (2005); VanDerHeyden, A. M., Witt, J. C., & Naquin, G. (2003); and Vaughn, S., Linan-Thompson, S., & Hickman, P. (2003) too have implied that RTI is a better model of intervention than the discrepancy model.

HOW RESPONSE TO INTERVENTION (RTI) WORKS

In a 2006 paper, NASDAE defines RTI as **(1)** providing high-quality instruction/intervention matched to student needs & **(2)** using learning rate over time and level of performance to **(3)** make important decisions.

The following is the list of core principles defined by the NASDAE (2006):

* We can effectively teach all children.

* Intervene early.

* Use a multi-tier model of service delivery.

* Use a problem-solving method to make decisions within a multi-tier model.

* Use research-based, scientifically validated interventions/instruction to the extent available.

* Monitor students' progress to inform instruction.

* Use data to make decisions.

* Use assessments for three different purposes:

  (1) Screening applied to all children to identify those who are not making progress at expected rates;

  (2) Diagnostics to determine what children can and cannot do in important academic and behavioral domains;

  (3) Progress monitoring to determine if interventions are producing desired effects.

The Three Models of RTI:

The Standard-protocol Model

Standard-Protocol has a set of well-defined steps or procedures for providing intervention. First, administrators establish the general nature of the deficit, and then match it with a predefined code of learning behavior. Students are divided into small groups as per their strengths and weaknesses. Interventions are provided for a pre-specific amount of time and frequency. Every student within the group receives the same type of instruction and intervention.

When implemented appropriately, it increases the probability of better quality control and interventions can be delivered to fairly larger groups with a higher degree of fidelity.(Fuchs, D., Mock, D., Morgan, P.L., & Young, C.L, 2003)

The problem-solving model

Problem-solving involves an in-depth analysis of skill-deficits and instructional and environmental variables that compromise students' performance (Shapiro, 2009).

Students are tested to measure their performance based upon these variables. The information thus obtained is used to identify sub-skill deficits and provide targeted intervention.

It helps identify individual students' strengths and weaknesses. This allows the instructors and teachers to root out the cause of skill-deficit. (Kovaleski, J. F., Tucker, J. A., & Stevens, L. J.,1996).

The Hybrid model:

In a hybrid model, both problem-solving and standard-protocol models are used within the same RTI process or framework. For example, problem-solving may be a better choice for students at tier-3 who have already demonstrated a lack of response to tier-2 interventions and require a more targeted and individualized intervention. While standard-protocol may be a better solution, if students exhibit similar learning-deficiencies (Shapiro, 2009).

Even so, all three models have similar elements- universal screening; a multi-tiered approach with increasing level of intervention; regular measurement of student performance data; and review of the change in student progress.

The three key components of RTI:

1) High-quality instruction/intervention:

   An important component of a successful RTI program is to provide students with research-based instruction and interventions that match their learning-needs (Barnett, et al., 2004). Such an instruction should also have displayed high learning rates for most students.

   Students are regularly assessed against this instruction/intervention. As per the individual student responses, the instruction/interventions are modified and learning goals are modified to fit their learning styles.

2) Learning rate and level of performance:

   Student-performance data is an important component for effective decision making (Heartland, 2005). The learning rate refers to a student's growth in terms of well-defined parameters over time as compared to his or her prior levels of performance and peer growth rates.

   Level of performance refers to the student's relative standing on some dimension of achievement/performance as compared to the expected performance criteria.

   Such data provides educators with valuable background for taking important learning decisions like, quality and intensity of further intervention; student's strengths and weaknesses and so on (Fuchs, 1986). Accurate and reliable data allows teachers and administrators to make educated, ongoing decisions (VanDerHeyden, A. M., Witt, J. C., & Gilbertson, D).

3) Important educational decisions:

   Based on the learning rate and level of performance educators make decisions that can affect and ensure improvement in student achievement of the class.(Heartland, 2005). Decisions like necessity of more intense interventions, including the benchmarks to shift students between different tiers are informed by data on learning rate and level of performance (Fuchs, 1986).

   Decisions like intensity and duration of interventions are based on individual student response to instruction/intervention.

THE INTERVENTION HIERARCHY

The intervention hierarchy is the system of increasing the level of intensity of instruction and interventions that match with the student's need for support.

The decision of moving a student from one level to another (between tiers) is guided by regular screenings and assessments that represent the student learning rate and performance level (Ardoin, S.P., 2004).

Tier-1:

In tier-1, research-based curriculum and effective intentional teaching strategies are provided to all students. The curriculum and instructions are aligned with grade relevant learning standards and benchmarks. All students are provided with high-quality instructions and are regularly screened for recording student performance data. Students identified as at-risk via a universal screening are monitored for their learning rate.

If the general-education curriculum is of high-quality, most of the students (including the at-risk populations), approximately 80%, should meet the pre-defined benchmarks (Compton, D.L., 2006). Students who fail to show adequate progress in tier-1 are now referred for tier-2 interventions.

Tier-2:

In tier-2, teachers provide interventions and curriculum modifications that suit student needs. These interventions can either be personalized to the student needs (problem-solving model) or of a generalized nature with minimum modifications over the general-education curriculum (standard protocol model).

Teachers form student groups based on student-achievement data (standard-protocol) or address specific 'at-risk behavior' (problem-solving). Students are regularly monitored for performance and learning-rate data. As in tier-1, decisions are based on research-based practices and guided by assessment results. A high-quality instruction/intervention program can assure success of about 15% of the total number of students (Compton, D.L., 2006).

Tier-3:

Students who fail to display adequate progress to the intervention programs offered in tier-2 are offered more intensive and individualized instruction. Students are scanned for fundamental flaws in their learning pattern. Based on the analysis, instructors make appropriate instructions and additional interventions. Teachers can even choose to work individually with the struggling students or provide them intensive intervention. Again, decisions are guided by student-performance data and regular-interval assessments.

Students, who fail to show adequate progress in this tier, are tested for learning disabilities and can be referred for special-education. A well-designed RTI program may reduce the total number of students identified as SLD below 5 % (VanDerHeyden, A. M., Witt, J. C., & Gilbertson, D).

ALIGNMENT OF PRACTUTOR WITH RESPONSE TO INTERVENTION (RTI)

PracTutor is based on the Hybrid Model of RTI:

The PracTutor design is based on the hybrid-model of RTI. It incorporates elements of the other two models of RTI- the standard-protocol and problem-solving models. By incorporating elements of standard-protocol, PracTutor allows the teachers to provide intervention to various groups of students. PracTutor is also aligned with the problem-solving model. Thus, it can address problems of students in tier-3 who have already demonstrated a lack of response to tier-2 interventions, and demand more specific interventions to address their individual needs.

Fidelity of PracTutor with RTI Fundamentals:

The following is a list of typical expectations that PracTutor satisfies. These expectations confirm with the essential RTI

components mentioned in 1) RTI Fidelity of Implementation Rubric (AIR, 2014); 2) RTI Essential Components Worksheet (AIR, 2014); 3) Response to Intervention: Blueprints for Implementation: School and District Level (NASDAE, 2011) and 4) District RTI Capacity and Implementation Rubric and Worksheet (NCRTI, 2012).

The expectations from teachers' perspective

1) It has a structure built upon the language of RTI;

2) It identifies strengths and weaknesses of students;

3) It delivers tiered instruction and intervention;

4) It assists teachers with the decision-making process (about moving students between tiers);

5) It can identify students who may have a specific learning disability;

6) It motivates students to improve performance;

7) It assists effective teacher-parent communication;

8) It allows easy collection of data and effortless data-interpretation;

9) Monitors student performance;

10) Research-based instruction module.

Expectations from students' perspective

11) It helps students develop concept understanding, reasoning skills, and problem-solving skills;

12) It engages students in critical thinking;

13) Allows students to consider Math and ELA as sensible subjects;

14) Allows them to develop a belief in their own efficacy;

15) Develops their abilities of solving problems that they have not seen before.

In the following section, we analyze PracTutor and its functions based on the above list, and validate its fidelity with RTI fundamentals.

1) PracTutor helps with early identification of at-risk students:

At-risk students are identified at the beginning of the year with universal screening. Teachers can use pretests to understand students' weaknesses. Reports provide in-depth analysis of student-performance to confirm students' at-risk status.

A typical pretest has two levels of questions, basic and critical. Every domain is locked by default and is unlocked only after a student has attempted its respective pretest. This data provides the baseline to measure student achievement and performance.

2) PracTutor defines time-based cut-point:

PracTutor allows the teachers to define a cut-point based on the time that a student takes to answer tests. Timed-tests allow the teachers to monitor the total time students takes to take a test. Such data is useful for making important learning decisions:

1) Is the student displaying satisfactory improvement?

2) Is there a need to make an instructional change?

3) Should the student be moved to a more or a lesser intensive intervention service?

3) PracTutor provides research-based curricula:

The PracTutor curriculum is based on Common Core State Standards, a set of high-quality academic standards in mathematics and English language arts/literacy (ELA). Core Standards outline what students should know and be able to do by the end of each grade. The standards define the knowledge and skills students should gain in every grade.

Common Core State Standards are

1) Research and evidence-based

2) Clear, understandable, and consistent

3) Aligned with college and career expectations

4) Based on rigorous content and application of knowledge through higher-order thinking skills

5) Built upon the strengths and lessons of state standards.

By aligning itself with Common Core State Standards, PracTutor ensures that students receive high-quality instructions. It allowed PracTutor to define a tree of dependent standards. Every standard stands over the knowledge of previous grade standards and its supporting standards. If students fail to master a particular standard, the inbuilt intervention map provides them with questions based on these root standards.

4) PracTutor helps monitor student progress:

Change in student performance is tracked using progress-monitoring tools. By monitoring progress, teachers can quantify students' rate of improvement and responsiveness to intervention. Schools can evaluate instructional effectiveness and formulate efficacious personalized programs for students who are least responsive to instructions.

PracTutor growth reports accurately represent student's academic development, and are also useful for planning future assessments. In the three-tier approach, teachers can use the growth reports to compare students' expected and actual rates of learning.

5) PracTutor adjusts the intensity and nature of interventions depending on students' responsiveness:

If a student fails to display grade-adequate response, PracTutor shifts itself to an intervention based model. In accordance with the cognitive theory, these interventions aim at building schemas. The interventions begin with hints to solve the problem; next, the system displays a step-by-step solution-guide (so that student can learn by understanding the standard procedure). Once, a student has developed confidence that he can solve the question, he is provided with the option of practicing with similar problems to develop their cognitive understanding. This instructional design reduces the chances of cognitive overload.

If this level of intervention does not work, the program provides the student with questions necessary to reinforce the previously-learned skills and concepts. This reduces chances of cognitive overload and helps develop their schemas.

PracTutor also provides students with video-instruction and practice-sessions that match with required level of difficulty.

If the instructors are sure that a student can cope with more intensive instruction, they can vary the degree of difficulty with the curriculum function. PracTutor makes it easier for teachers to obtain desired results by varying other factors that affect the cognitive load like-instructional time, frequency of sessions, student groups, and the type of questions.

6) PracTutor provides adequate data to inform intervention decisions:

Growth and performance reports can be used to compare the adequacy of the their curriculum as well as the effectiveness of different instructional strategies for various groups of students within a school. Such information can be used to make well-informed decisions, which can be used to meet the needs of the student in that grade.

Implementation of PracTutor for RTI in schools

Here, we consider an average classroom and a possible RTI scenario to analyze the utility of PracTutor for each step of RTI and to establish its usefulness for implementing RTI in real-classroom scenario.

Step 1: Screening

The complete class is screened at the beginning of the year. Students are screened irrespective of their last year's performance. This process of universal screening helps identify students "at-risk" of failure.

Is PracTutor useful for Screening?

To identify at-risk students, everyone is assessed using brief screening tools called pre-tests that demonstrate diagnostic utility for predicting student performance. These tests check students' mastery for every standard in a domain.

Step 2a: Implementing Classroom Instruction (Tier-1)

All students receive similar instruction as in every general-education program, in conjunction with No Child Left Behind and the Common Core State Standards.

Is PracTutor useful for implementing classroom Instruction?

PracTutor questions are selected in strict compliance with Common Core State Standards. This ensures that students are provided with high-quality instructions. The PracTutor question bank provides teachers with a relevant and rigorous lot of questions to assign from. This question bank also includes a large set of interactive, engaging questions. This enhances the chances of at-risk students of improving their performance while still in tier-1.

The PracTutor design reduces chances of cognitive overload, most associated with low-performing students. Moreover, the packet-structure ensures development of working memory by ensuring development of schemas, this allows the teachers to ensure that every student receives appropriate instruction and meets requisite performance standards.

Step 2b: Monitoring Responsiveness to Classroom Instruction (Tier-1)

Once the at-risk students are identified; their performance is monitored for a pre-specific period of time to identify the subset that fails to respond to the general education curricula.

Is PracTutor useful for Monitoring responsiveness to classroom instructions?

At-risk students can be assessed in the area of risk using PracTutor reports. Tier-1 response can be measured using (a) local or national normative estimates for weekly improvement OR (b) criterion-referenced figures for weekly improvement. If (a) and (b) are unavailable, then adequate tier-1 responsiveness can be defined as "some improvement" (PracTutor growth reports)

PracTutor for Tier-1: Summary

A successful tier-1 program allows nearly 80% of students to match the standard requirements. The PracTutor algorithm is designed to assist teachers with implementation of all three tiers of RTI in each of their classrooms. The scientifically-based instruction and the high-quality questions generated by PracTutor ensure that the assessment results are the reflection of true potential of the students. It also ensures there is not a result of inadequate instructions.

The PracTutor design helps teachers screen students periodically. With the aid of PracTutor reports, teachers can track student performance and identify struggling students who need additional support. The students can choose and learn from the educational videos. Each video corresponds to one of the learning styles as per VARK (Video, Audio, Reading, and Kinesthetic).

Students learn, practice, and take tests for each standard to ensure continuous progress. Students can take up the same lesson repeatedly with various resources until they receive desired grades. The assessment scores, performance and progress reports identify the students who are still struggling. Teachers can monitor students' progress and provide immediate remediation.

Step 3a: Implementing a supplementary, diagnostic-instructional trial (Tier-2):

Tier-1 non responders receive special instructions in addition to the general-education program. This trial is explained to parents in a letter or a personal meeting. Written parental consent is taken for the trial to proceed.

Is PracTutor useful for supplementary, diagnostic instructional trial?

Teachers can classify the tier-1 non responders in small-groups. These groups are based on shared instructional strengths and weaknesses. Reports and email-alerts highlight the standards students are struggling with. Instructors can shift their teaching approach to learning weaknesses and can concentrate on improving student performance.

If a student fails to respond to a concept, he is provided an option to either try a similar problem, study via video lessons, attempt a question with aid of hints; next detailed explanations are provided, after that PracTutor's internal three-tier intervention is activated to address basic standards. This ensures that a maximum number of students benefit from tier-2 interventions.

Step 3b: Monitoring responsiveness to a supplementary, diagnostic instructional trial (Tier-2)

Response to tier-2 is monitored to identify the subset of students who respond inadequately (i.e., Tier-2 non responders). Parental feedback is provided in a written report, a telephone call, or a personal meeting.

Is PracTutor useful for monitoring responsiveness to supplementary, diagnostic instructional trial?

At-risk students can be assessed for at-risk standards using brief monitoring tools. Adequate tier-2 response is determined using (a) local or national normative estimates for weekly improvement OR (b) criterion-referenced figures for weekly improvement. If (a) and (b) are unavailable, then sufficient tier-2 responses can be measured as "some improvement" (Students' growth) (Douglas Fuchs and Lynn S. Fuchs, 2001).

PracTutor for Tier-2: Summary

PracTutor incorporates elements of both standard-protocol and problem-solving model of Intervention. It gives schools the choice of implementing any of the three models of RTI. The students who need tier-2 interventions are about 15% of the total class. Students identified as not "making adequate progress" are provided with progressive intensive instruction that matches their needs. As stated earlier, these needs are identified based on the individual levels of performance and progress.

PracTutor ensures that the students who are identified as 'struggling' in the curriculum receive sufficient instructions. These instructions are in the form of appropriate video lessons and step-by-step guides, along with explanations to ensure that students grasp the basics and relate with the basics thoroughly before they attempt complex standards. Teachers can also group the students as per their skills and can assign the Core Standards to individual groups or to the whole class as per the needs of intervention. The detailed reports help the teachers to stay on top of student assignments and progress.

Matching with RTI recommendations, teachers and parents can communicate and share student-data, daily development and exchange views from their respective PracTutor accounts. Parents with a PracTutor account get the opportunity to participate in the intervention program, as children can practice at home under parental supervision too.

Step 4: Intensive individualized intervention (Tier-3)

The tier-2 non-responders receive an individualized, comprehensive intervention. Teachers work with individual students to address their weaknesses. Students are given more intensive interventions. Students are tested more frequently to diagnose the nature of the weakness and document improvement. Written parental consent is required for the trial to proceed.

Is PracTutor useful for Intensive individualized intervention?

The PracTutor design implements a Common Core based learning tree; each standard is mapped with its root domain. If a student repeatedly fails to respond, its internal intervention program shifts tutoring and practice to the root standards. This ensures that student progress is a pure result of concept mastery. Thus a teacher can identify student weaknesses using the pre-tests and studying PracTutor reports.

PracTutor for Tier-3: Summary

In phase 3, those students who fail to respond to tier-1 and tier-2 interventions receive personalized, rigorous interventions that target their specific skill-deficits for the remediation of the existing problems. This level assists in the prevention of severe and deep-rooted issues.

The PracTutor algorithm links each Common Core State Standard with the previous pre-requisite standard. This allows PracTutor to introduce intensive intervention by inserting the lacking skills in a student's personalized learning path.

PracTutor's Standard-mapping helps teachers understand the fundamental problem hindering student growth and helps them select suitable interventions. Again, the PracTutor messaging tool enables parents to play an important rule by providing them with a door to collaborate with teachers.

Conclusion:

During this study, we examined various models of RTI, and explored the implementation of RTI in the US. It is evident that RTI has helped reduce the number of students labeled with learning-disability (VanDerHeyden, A. M., Witt, J. C., & Gilbertson, D). This sorting of students has helped improve the quality and effectiveness of special-education services. We could clearly establish the congruency of PracTutor with RTI fundamentals. This study could also highlight the role that PracTutor tools could play in an RTI program. This study identified a number of PracTutor characteristics that provide effective intervention to at-risk students and helps them catch up with the typical students of the class.

The following is the consolidated list of our observations:

- PracTutor offers support as soon as a student starts struggling with a standard.

- Its algorithm increases the intensity of instruction and practice sessions and is usable for all three tiers of RTI.

- PracTutor provides the opportunity for explicit (direct) and systematic instruction and practice along with cumulative reviews to ensure mastery.

- It provides relevant instruction along with the opportunity of giving immediate feedback to the at-risk student.

- It supports the decision-making process with its reporting module. Its reports are strictly based upon student performance data.

- PracTutor environment is motivating, engaging, and supportive.

- Its design is based on the cognitive theory.

The purpose of PracTutor RTI framework is to create the opportunity for identification of students with learning problems and ensure that they receive appropriate instruction and support from teachers and parents. An important component of PracTutor as an effective RTI tool is the high-quality instruction that students receive during their general classroom program (primary prevention level). PracTutor's strict adherence with RTI Principles and the Common Core State Standards, allows teachers and parents to be confident that a student's need of a comprehensive intervention is met and that all decisions are data-driven.

PracTutor ensures that a teacher can respond to the weaknesses of their students; make decisions powered with data-intensive reports and have core-aligned tools on their desk, twenty-four hours a day. Moreover, it gives students the unique opportunity to take charge of their own learning, and improve their performance even before their teacher gets a chance to intervene.

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