11
Contextual Influences and Response to Intervention: Critical Issues and Strategies

Amy L. Reschly, Melissa Coolong-Chaffin, Sandra L. Christenson, and Terry Gutkin

Amy L. Reschly, PhD, is an Assistant Professor of Educational Psychology and Instructional Technology at the University of Georgia. reschly@uga.edu

Melissa Coolong-Chaffin, EdS, is a doctoral student in Educational (School) Psychology at the University of Minnesota. cool0044@umn.edu

Sandra L. Christenson, PhD, is Professor of Educational (School) Psychology at the University of Minnesota. chris002@umn.edu

Terry B. Gutkin, PhD, is Professor of Counseling, San Francisco State University. tgutkin@sfsu.edu

The psychological and educational literature is replete with lists of the shortcomings of traditional educational assessment and intervention practices and concomitant calls for reform (e.g., Reschly, 1988, Sheridan and Gutkin, 2000; Ysseldyke and Christenson, 1987), and yet *change has been slow*. Much of current practice may still be characterized by said shortcomings, such as: predominately within-child conceptualizations of educational difficulties; too little time allotted for prevention and early intervention; more rhetoric than action in creating significant opportunities for parent engagement; assessment conducted for the purpose of eligibility determination, rather than intervention; and the reliance on placement as a means of addressing students' difficulties. An emerging alternative, response to intervention (RTI), addresses many of these limitations. However, to meet the spirit of those calls for reform, an RTI approach requires consideration of the complex interaction among environmental influences in multiple contexts, those in which children learn and develop. Conceptualized in this way, RTI is an opportunity to fully realize the assessment to intervention link.

11.1 Systems Ecological Theory

Students develop, learn, and behave within a context. This idea is not new or controversial. Indeed, there are few individuals within the field of education who lack at least a passing familiarity with the seminal work of Bronfenbrenner (1977), and the notion that there is "something about context" that might be important has permeated the consciousness of those who study and work with children. However, with few exceptions, a meaningful integration of systems ecological theory with research or practice has yet to occur. A true application of this theory has significant implications for how we conceptualize students' successes and difficulties, collect data, conceive of interventions, and define not only who stakeholders are, but how to work with them.

In the classic model proposed by Bronfenbrenner (1977, 1992), children are viewed as developing within a series of nested contexts, or structures (see Figure 11.1). These structures range from immediate settings the child is part of, such as home, school, or community, to broad cultural norms. In addition, these structures interact, or have reciprocal influence, over time. Development, then, is understood as a process of ongoing adaptation between the individual and the environments in which the individual is embedded. Further, development is affected by the interactions between these contexts, those that are immediate and more distal from the individual, formal and informal, across the lifespan (Bronfenbrenner, 1977). The influential variables from the four levels must be recognized to understand child functioning in schools. Applied to the mesosytem of home and school, Christenson and Sherdian (2001) have argued that parent and teacher input are essential to understand children's learning difficulties

Macrosystem
Exosystem
Mesosystem
Microsystem

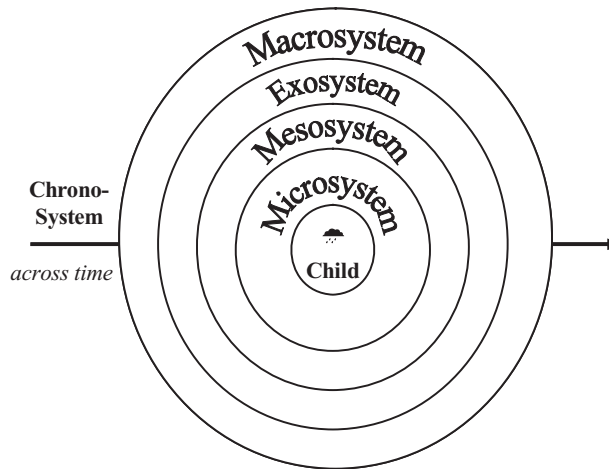**Chrono- System**

across time

Child

FIGURE 11.1. Graphic representation of Bronfenbrenner's ecological model.

in academic, social, emotional, and behavioral domains; the total picture of child functioning must be "co-constructed." Also, as children grow and develop, they interact directly with more systems; therefore, complexity is increased in understanding adolescent behavior.

There are several organizational principles of systems ecological theory that not only enrich our understanding of children's development over time, but also are particularly influential for intervention planning and implementation. These principles include multifinality, equifinality, nonsummativity, and circular causality (Christenson, Abery, and Weinberg, 1986; Christenson and Anderson, 2002). *Multifinality* refers to the idea that similar initial conditions, or antecedents, may result in different outcomes. For example, a standard, uniform prescription for parental assistance with homework may achieve the desired goal for some children and families but not work with others. The principle of *equifinality* suggests that different initial conditions may lead to similar end states. For instance, families whose interactional styles are diverse (authoritarian, permissive, authoritative) may have children who experience similar degrees of school success. *Nonsummativity* suggests that the system is greater than the sum of its parts. The interactions among the parts contained within the system create something greater than each of the parts taken in isolation (i.e., synergy). Finally, the principle of *circular causality* refers to the notion that every action within a system, which is comprised of a number of

individuals, is also a reaction. Changes are nonlinear. For example, changes in a child's home environment may affect their behavior and achievement at school and perhaps, interactions with peers. The notion that change in any one system in which a student interacts creates ripple effects (i.e., changes) in other systems and among systems is a classic theoretical underpinning of systems ecological theory.

Pianta and colleagues (Pianta and Walsh, 1996; Rimm-Kaufman and Pianta, 2000) have made significant contributions to our understanding of systems theory and educational processes. One important consideration for understanding systems and development is the relationship that exists among socializing agents, or contexts, such as home and school or family and peers. These relationships are affected by history and the quality, nature, and quantity of contact. The *pattern of relationships* among socializing agents may either enhance or thwart students' learning in our schools. By drawing attention to relationships and interactions among contexts, it is understood that risk, and by extension, competence, cannot be located within any one level – child, family, school, or community – but rather, resides in the interactions and relationships among these agents. Of particular relevance is that any discontinuity between home and school is a risk factor with respect to expectations, value placed on learning, and communication patterns (Pianta and Walsh, 1996) that is alterable with changes in assessment and intervention practices.

Instructional Support	Home Support	Home-School Support
Instructional Match	Home Expectations and Attributions	Shared Standards and Expectations
Instructional Expectations	Discipline Orientation	Consistent Structure
Classroom Environment	Home-affective Environment	Cross-setting Opportunity to Learn
Instructional Presentation	Parent Participation	Mutual Support
Cognitive Emphasis	Structure for Learning	Positive, Trusting Relationships
Motivational Strategies		Modeling
Relevant Practice		
Informed Feedback		
Academic Engaged Time		
Adaptive Instruction		
Progress Evaluation		
Student Understanding		

FIGURE 11.2. Ysseldyke and Christenson's support for learning components.

The work of other theorists, such as Vygotsky (1962), Carroll (1963), Bandura (1978), Sameroff (1983), and Ysseldyke and Christenson (2002), has helped those interested in schooling conceptualize students' behavior and learning from an ecological systems theoretical framework and describe variables of interest in the learning environment. The work of Vygotsky (1962) and Carroll (1963) indicated the importance of individualized support from the learning context. Vygotsky's (1962) "zone of proximal development" opined a match between an appropriate, or ideal, level of difficulty and the provision of instructional supports, or scaffolding, from teachers, allowing students to benefit optimally from instruction; in contrast, in Carroll's (1963) model of student learning, how much a student learns is a function of the amount of time spent learning and the amount of time needed to learn (comprised of aptitude, ability to learn, and quality of instruction). The concept of *reciprocal determinism* (Bandura, 1978) portends that behavior is a function of the context in which it occurs, resulting from a continuous interaction between cognition, affect, and the environment.

After reviewing the literature, Ysseldyke and Christenson (2002) proposed a model of student learning based on systems ecological theory. In this model, the learning environment is broadly con-ceived to include the critical contexts in which children learn (school, classrooms, home) and the interface between these contexts. Student learning, or academic behavior, is understood as a function of instructional, home, and home–school supports for learning. Further, they delineated important alterable variables for assessment and intervention planning within each of these contexts (see Figure 11.2).

11.2 Implications for Assessment and Intervention

Several implications of systems ecological theory for assessment and intervention practices exist. For example, if individuals are understood as developing, learning, and behaving within multiple contexts, then assessment and intervention practices must attend to these settings and contexts. Assessments that focus primarily on within-student characteristics are not consistent with a systems ecological framework. In the words of Sheridan and Gutkin (2000, p. 489), "We cannot serve children effectively by decontextualizing their problems as internal pathologies . . . ." Furthermore, individuals and systems change with time. Assessment, then, must also be an ongoing, dynamic process – one that is

not complete until interventions have altered student responses in a positive direction. In addition, important outcomes, such as achievement or dropout, are complex with multiple determinants. These outcomes cannot be accounted for by examining single variables in isolation. Rather, students and their environments must be viewed systemically.

In the next section, three assessment tools that may be used to assess critical contextual influences within an RTI model are described. Those included in this chapter are not all inclusive, nor does using one or more of these ensure an ecologically valid assessment. Rather, an important principle of systems ecological theoretical framework is that of *integrating information from multiple sources.* A relevant distinction may be made between a systems approach and general systems theory for understanding children's development (Sameroff, 1983) and, by extension, assessment practices. A systems approach refers to examining aspects of context in relative isolation (e.g., parenting *or* teaching practices related to student achievement), whereas systems theory may be used as the structure for organizing information from the contexts, settings, and interactions related to development. A meaningful integration of systems theory and assessment requires the latter perspective.

11.3 Tools for Conducting an Ecological Assessment

The challenge for educators is to conduct assessments that take into account the multiple contexts in which the child is learning. The goal of assessment in an RTI model is not simply to determine whether or not a student qualifies for special education services; rather, the assessment process helps practitioners pinpoint what variables/characteristics of/alterations in the environment bring out the best response from the targeted student. Assessment is not a finite step on the road to eligibility; rather, it is an ongoing process through which the most appropriate intervention for the student's specific problem is identified, implemented, and its effectiveness evaluated – the core elements of problem-solving methodology.

Three specific tools for conducting an ecological assessment are described, including brief experimental analysis (Daly, Witt, Martens and Dool,

1997), the Ecobehavioral Assessment Systems Software (EBASS; Greenwood, Carta, Kamps, Terry, and Delquadri, 1994), and the Functional Assessment of Academic Behavior (FAAB; Ysseldyke and Christenson, 2002).

11.3.1 Functional Analysis of Academic Behavior

From a behavioral perspective, RTI involves a functional rather than a structural explanation for performance deficits (Christ, Burns and Ysseldyke, 2005). In contrast to focusing on within-child deficits as an explanation for learning problems (i.e. the structural approach), the functional approach focuses on external, alterable variables affecting the child's performance, such as time allotted for instruction, level of difficulty of material, and teacher feedback (Daly et al., 1997). Since the explanatory variables for performance deficits are alterable, they can be manipulated to test various hypotheses about why the problem is occurring. Once a plausible functional explanation is determined, appropriate interventions can be selected based on that function.

Daly et al. (1997) pioneered the use of brief experimental analysis for choosing and evaluating academic interventions. Each intervention is designed to test one of the following hypotheses:

1. The child does not want to do the task.
2. The child has not had enough practice to do the task.
3. The child has not had enough help to do the task.
4. The child has not had to do it that way before.
5. The task is too difficult.

By manipulating each independent variable successively (i.e. incentive, practice, modeling, rehearsal and feedback, and task difficulty, respectively), while measuring the same dependent variable (e.g. oral reading fluency), and then replicating the results, the most successful intervention can be chosen for each student. The hypotheses are arranged in ascending order from least intrusive to most intrusive, and when tested in that succession they allow the interventionist to determine the most simple, effective intervention for the student.

Using a brief experimental analysis technique within an RTI framework allows practitioners to determine not only whether a student has "responded

to intervention" for special education placement decisions (i.e., where to teach), but also answers the more practical questions of how to teach and what to teach (i.e., produces data with instructional utility). An added benefit of this approach is that the five hypotheses are very understandable to parents and, in addition, build on the consistent finding that parents want practical strategies to know how to assist their children's learning (Christenson and Sheridan, 2001). The relevance of this approach is that realistic, and yet optimistic communication about children's learning progress can occur between home and school.

11.3.2 Ecobehavioral Assessment Systems Software

EBASS enables observers to record behaviors in a classroom setting using a laptop computer. The Code for Instructional Structure and Student Academic Response (CISSAR) is one component of the EBASS system designed for use with students in general education settings. The CISSAR focuses on three main areas: student behaviors, teacher behaviors, and the ecology of the classroom.

Student behaviors include *academic responses*, in which the student is actively engaged in the appropriate task (e.g., answering a question, reading aloud); *task management responses*, in which the student is preparing to make an academic response (e.g., raising hand, looking for a pencil, paying attention to lecture); and *competing responses*, or behaviors that are considered inappropriate in the classroom (e.g., talking out of turn, hitting a classmate). Teacher behaviors include what the teacher is doing (e.g., asking an academic question, disciplining a student) and the position of the teacher in the room. Classroom ecological variables include activity (e.g., reading, math, transition), task (e.g. worksheet, reader, pencil-and-paper task), and instructional grouping (e.g. whole class or small group).

Once observations are completed, it is possible to compute the percentage of time during the observations that the various student, teacher, and ecological events were occurring. An ecobehavioral analysis can then be conducted to determine which setting events are most associated with positive and negative behaviors from the student. Thus, EBASS allows assessors to analyze the instructional environment of the classroom in order to identify multiple points for intervention within that classroom en-

vironment. Information gathered with EBASS has ecological validity; identification of student and teacher variables can be used to create home support for learning interventions.

11.3.3 Functional Assessment of Academic Behavior

The brief experimental analysis procedures previously described focus on manipulating factors in the student's immediate instructional environment that affect academic performance (i.e. antecedents and consequences of specific academic behaviors), while EBASS allows observers to identify events and behaviors in the classroom environment that contribute to or inhibit student learning. Ysseldyke and Christenson's *FAAB* takes an even broader ecological approach. As an assessment tool, the focus of FAAB is on designing interventions to enhance the student's performance through identifying and coordinating instructional, home, and home–school support for learning (Ysseldyke and Christenson, 2002).

Ysseldyke and Christenson (2002) draw on the work of Bronfenbrenner, defining the instructional environment as the school, classrooms, and home contexts in which students learn, as well as the interface of these contexts. Beyond classroom variables, FAAB gathers information across home and school in order to develop comprehensive interventions across socializing agents. Twenty-three alterable variables related to academic performance are subsumed under three categories: instructional support for learning, home support for learning, and home–school support for learning (see Figure 11.2). Nine steps in the assessment and intervention process similar to other models of problem solving and consultation are described, including identifying and clarifying the reason for referral, gathering parent and teacher perspectives on the student's instructional needs, collecting data on the student's total learning environment, selecting interventions based on priorities and needs, identifying complementary home supports for learning, implementing the intervention, evaluating the intervention's effectiveness, revising the plan, and documenting and reporting results.

FAAB provides the philosophical framework as well as specific assessment tools for gathering information, including reproducible parent, teacher, and student interview and classroom observation

forms. Once information is gathered, interventions to address the fit, or lack thereof, between student characteristics and the total instructional environment can be developed. FAAB takes into account the important influence of home support for learning, whereas many other assessment tools do not.

11.4 Promise for Practice

The shift from traditional models that search for within-child variables to explain learning difficulties, to an RTI approach that focuses on finding the best instructional match for students, holds much promise for practitioners seeking to move beyond asking *where* a student should be taught to asking *how* and *what* to teach. However, for the promise of RTI to be fully realized, practitioners must take an ecological systems approach, addressing the complex interactions between the child and the multiple environmental systems in which they live and learn. Sheridan and Gutkin (2000, p. 486) eloquently explain the need for ecological assessment:

When children experience difficulty learning to read, for example, this "dysfunction" is best understood as the product of multilayered, proximal, distal, and interactive systems. Among these systems are the individual children themselves, educational contexts, prevailing social environments, societal influences, and the interactions among and across all of these systems.

Consideration of students' learning within the broad educational environment in an RTI model represents a significant change in practice for educational personnel, with implications for assessment and intervention in terms of what is assessed (e.g., home and school support for learning, opportunity to learn, antecedents), roles for parents, and the timing and ongoing nature of assessment and intervention. No longer focusing on testing the student using standardized measures in a contrived setting (Dean, Burns, Grialou, and Varro, 2006), school professionals will potentially have more time to partner with parents (should they choose to use it), to discover the child's unique instructional needs (e.g., motivational support, increased opportunities for practice, appropriate instructional level, specific skill remediation, homework completion strategies, etc.) and develop effective interventions across home and school environments. Parents are necessary, not optional, in a well-conceived application of RTI. Family–school interventions have demonstrated positive effects on

students' school performance and behavior (Carlson and Christenson, 2005). A recent review of the literature on parent and family interventions implemented at or in conjunction with school settings found that the most effective elements of programs were those that emphasized dialogue about programming and shared communication/monitoring of student performance, had specific intervention targets, strategies that emphasized the role of parents as teachers, and consultation with parents about child-specific concerns (Carlson and Christenson, 2005).

The changes in practice inherent with an RTI model, such as the focus on screening, early intervention, and progress monitoring, provide an opportunity for active parent engagement and partnering between family and school personnel much earlier in the development and identification of a student's academic or behavioral difficulty (i.e., before problems are severe and often intractable) than is typically the case in traditional practice, thereby pairing the promise of early intervention with partnership between primary socializing agents – home and school. In addition, teachers are integral to the success of school–family partnerships (Dauber and Epstein, 1993; Westat & Policy Studies Associates, 2001). For example, the more that parents perceived teachers as valuing their contributions, keeping them informed of their child's strengths and weaknesses, and providing them with suggestions, the higher was the parental engagement in children's learning in urban settings (Patrikakou and Weissberg, 2000). From a preventive point of view, early teacher–parent consultation in the assessment to intervention process is invaluable. Parents and teachers can share their perspectives with respect to the school- or parent-based concern, generate ideas for intervention, and begin to understand the questions each has with respect to assisting the students' adaptation to the demands of the school environment. Maintaining a partnership focus rests on school personnel *inviting* parents to partner, *informing* parents of child progress relative to classmates and school demands and *being informed by* parental input, and *including* parents in the development of instructional programming.

In addition, a fully realized RTI approach has the potential to change how the various adults (i.e. teachers, parents) in a child's life interact to improve outcomes. The shift from questions of *where* to *what*, *how*, and *did it work* necessitate changes

in the roles of teachers, psychologists, administrators, and parents. Assessment and intervention are far too often viewed as separate, albeit interrelated, functions of the school psychologist. Seldom do assessment teams address and integrate how parents might be involved as active participants in the assessment plan. The work of Harry (1992), a special education researcher, is beneficial for creating the assessment to intervention link within the RTI model. She suggested that the parent–professional discourse must change to provide official channels for reciprocal rather than one-way discourse, and that this can be achieved best by having parents assume active roles – specifically, parents as assessors, presenters of reports, policymakers and advocates, and peer supports. School psychologists and other school personnel can facilitate parent participation in these roles (e.g., discussing data collection ideas and sharing strategies and forms; ensuring there is opportunity and time for parents to give input, view data, and be involved in intervention planning; connecting parents to each other to share experiences and information). When educators actively engage parents in these roles, they begin the process of developing collaborative practice or create conditions whereby parents and educators understand the "bigger" picture about children's development and educational needs. Examples excerpted from Christenson and Sheridan (2001) are provided in Table 11.1.

Public Law 108-446, the Individuals with Disabilities Education Improvement Act (IDEA; 2004), mandates that parents are part of the special

TABLE 11.1. Potential parental roles in assessment and intervention.*

Assessors and presenters

- Parents sharpen the referral by providing questions for the assessment to address.
- Observation techniques are demonstrated to parents (e.g., ABC analysis) and then used to gather data to answer specific questions.
- Parents monitor and record ways in which students spend their time.
- Parents are given time to ask questions of educators.
- Parents are included as part of the assessment team on intervention planning and other required forms.
- Parents describe the kinds of messages given to their child about schoolwork and effort for learning.
- Parents provide teachers and teams with information regarding what motivates the child, what reinforcements have worked, successes in previous years, etc.
- Parents provide the home input and educators the school input on the same, specifically defined behavior. Discussion and interpretation of the findings occurs together.
- Parents collect data for and evaluate interventions.
- Parents offer recommendations for implementation of interventions.
- Parents present observational data from home/school/community.
- Parents explain cultural context for child behavior to educators.
- Parents report on community events (gang activity, stressors) to give an ecological dimension to understanding child behavior.
- Parents report on child strengths in general and child strengths relative to a specific mutually identified concern. Gather same information from school personnel.
- Parents use half of the conference time to report about their child (send home sample questions for their consideration).
- Parents present intervention strategies that have worked well in the past.
- Parents present information regarding child's personal or medical history/background.

Policymakers

- Parents co-conduct forums to educate parents re: policy issues.
- Parents suggest agenda items, issues for consideration for advisory meetings.
- Parents serve on policy-making committees and have voting power.
- Forums/discussion groups are created to allow parents to meet independently from teachers/administrators.

Advocates and supporters of other parents

- Parents with experience with intervention planning and/or special education process, rules, and policies serve as advocates and encourage other parents to be active participants.
- Provide opportunities to parents for advocacy training and make it a routine part of service delivery to include parent advocates/partners.
- Provide parents with opportunities to have contact with other families who share similar backgrounds and/or experiences.
- Parents serve as advocates for each other (e.g., bring another parent to IEP meeting for support).

*Excerpted from Christenson and Sheridan (2001).

education process, including: providing informed consent to conduct initial evaluations and begin special education services upon finding the child eligible; contributing information to the evaluation; and participating in the development of the individual education plan, detailing students' special education needs, goals, and services. Information from existing RTI models indicates that parents are only included explicitly as part of the process in two of the four widely disseminated RTI models (i.e., the Heartland model in Iowa and the intervention-based assessment (IBA) model in Ohio) (Burns and Ysseldyke, 2005; Fuchs, Mock, Morgan and Young, 2003). However, the positive effect of the family environment and school–family partnerships for enhancing children's learning outcomes is undisputed (Carlson and Christenson, in press; Christenson and Sheridan, 2001). It is our contention that opportunities for partnering should not begin with, or be limited to, special education eligibility. As RTI moves to scale across the USA, we must be careful not to repeat the mistakes of the past. RTI is an opportunity to partner with and engage parents throughout the problem-solving process.

McNamara, Telzrow, and DeLamatre (1999) conducted a study that looked at how parents of children referred to an Ohio IBA team for problem solving reacted to the IBA process, and how those reactions related to student goal attainment. The results indicated that parents generally wanted to be involved in the process, felt that adequate opportunities existed for them to participate, and did in fact participate. In addition, parents who reported greater involvement in developing the intervention plan for their child also reported that they felt the plan adequately addressed their child's unique needs, were more satisfied with their child's progress in school, and reported higher ratings of their child's feelings of success in school. Finally, students were more likely to meet their goals when parents supported the intervention plan at home.

Christenson, Rounds and Gorney (1992, p. 192) identified several family factors correlated with positive academic outcomes for students in their classic literature review. These factors are:

...high, realistic parent expectations for school performance, parents' use of effort attributions for school performance, parents' structure and support for learning in the home, positive emotional interaction between parents and children ... parents' use of an authoritative parenting style, and parent involvement in education at home and school.

Two of these factors (i.e., high, realistic expectations and parents' use of effort attributions) may be directly affected by the shift away from a within-child, medical model of learning disabilities. Traditionally, the message parents presumably received throughout their interaction with the special education evaluation and service process was that something is "wrong" with their child and this "disability" is causing that child's learning problems. Contrast this with the message parents may receive in an RTI model, where the focus is on alterable, environmental variables, as the reason for learning difficulties. The message may be *we as educators need to work with you to determine how to best help your child learn*. No longer are educators seeking to diagnose a problem within the child; rather, they are trying to identify what factors in the environment occasion the best learning outcomes for the child. This is a fundamentally different message for parents and students to receive, a message that reinforces the definition of school–family partnerships as shared goals plus shared contribution plus shared accountability (Fantuzzo, Tighe, and Childs, 2000).

11.5 Benefits of Active Parental Engagement

The benefits of increasing active parental engagement in the RTI model are many and varied. Active parental engagement in RTI offers the chance to focus parent participation in children's learning on reinforcing and meeting students instructional needs, something Edwards (2004) has referred to as making "strategic connections" with the curriculum. These strategic connections would be apparent in collaborative home–school interventions, maximizing students' out-of-school learning time, and joint monitoring of a student's learning progress. Other expectations and benefits of RTI for key stakeholders are presented in Table 11.2.

A recent example of the integration of RTI and parent engagement in assessment and intervention may be found in Figure 11.3. Dunsmuir et al. (2005), at the training program for educational psychologists at London College University, have

TABLE 11.2. Expectations and benefits of RTI for key stakeholders.

Students

- Greater opportunities for
  - screening and early intervention for academic or behavioral concerns;
  - congruence in messages between home and school;
  - participation in their own interventions, including data collection, goal setting, preferences, self-reported conditions surrounding academic and behavioral difficulties.

Parents

- Opportunity to be involved at the first indication of a problem or concern.
- Critical source of information about the student.
- Necessary partner in the assessment and intervention process.
- Shared responsibility for student outcomes.

School professionals

- Less time in traditional assessment practices; more time spent in consultation, screening, direct intervention, and program evaluation.
- Consideration of the broad learning environment.
- Shared responsibility for student outcomes.

systematically created connections between parents and teachers throughout six phases representing the assessment to intervention link. In this figure, parent and teacher perspectives are gathered primarily to address two questions: What can be manipulated in the broad learning environment to bring about better student performance? And what resources do parents and teachers need to be actively involved in supporting student learning?

11.6 Potential Contributions to Public Health and Prevention

As has been documented in both the general mental health and school psychology literature, it is becoming increasingly clear that public health and prevention models must be implemented if there is to be any realistic hope of providing effective and systemic solutions to the "tidal wave" of educational and psychological problems facing our nation in the 21st century. The statistics are indeed grim, particularly for children and youth (Garbarino, 1995). Recently, Gutkin and Mills (2005) characterized our current state of affairs as nothing short of a "pandemic." A few dramatic examples suffice to make the point.

Nearly half of the US population will experience at least one diagnosable DSM-IV mental illness during the course of their lifetime, with half of these cases starting as early as age 14 (Kessler, Berglund, Demler, Jin, and Walters, 2005). Approximately one-third of fourth graders read at or above basic levels in reading proficiency and another one-third are behind a year or more in school (Sheridan and Gutkin, 2000). Problems of this breadth and scope will not respond to "business as usual." They call for significant alternative approaches to educational and psychological service delivery. Public health and prevention methodologies with school-aged populations hold the key to success (Gutkin and Mills, 2005; Strein, Hoagwood and Cohn, 2003).

RTI, if properly conceptualized, can play an important role in these public health and preventive approaches. Although born out of IDEA and special education legislation, it would be an enormous mistake to limit its application to this restricted population. RTI can and should be applied universally to enhance educational achievement for all children and youth. Looking back in our history, we can see similar pedagogical systems being advocated in the early 1970s in the form of diagnostic teaching (e.g., Cartwright, Cartwright, and Ysseldyke, 1973; Sabatino, 1971), but these were mistakenly framed within the limited context of serving special education and handicapped students and thus never achieved their full potential. Scanning the discussion of RTI to date, it would appear that school psychologists and educators are vulnerable yet again to falling into this trap. We want to suggest in the strongest of terms that this would be a serious mistake and that it would dramatically limit the potential systemic benefits of RTI approaches.

The rationale and logic behind RTI, which is essentially the logic of data-based decision-making, applies just as much to students in general education as it does to those being considered for special education. Limiting the application of RTI to special education diagnostic determinations is to miss the point and possibilities of this methodology. As argued convincingly by Stoner and Green (1992), all school-based and educational practice can be best approached in much the same manner as a research project. Hypotheses should be developed and then tested by gathering data. Successful educational methods should be retained and implemented over time with students. Unsuccessful

Functional Assessment as part of Problem Analysis

Analysing influences on performance and identifying possible drivers for change

Phase 1: Negotiate role and agree brief

Phase 2: Generate hypotheses

Phase 3: Develop problem dimensions

ASSESSMENT
School / home

Learner characteristics   Dimensions of the task   Learning environment

Q. How does the child approach the task?

Q. Does the child understand the teaching? Are they engaged / accessing the curriculum?

Q. What factors influence the child's performance?

Phase 4: Integrate problem dimensions

Environment	Biological
Dimension of the task	Cognitive ...rfect
Learning environment	Behavioural

Learner Characteristics

Phase 5: Negotiate priorities for Intervention and agree Action Plan

School / Home

Learner characteristics

Learning environment

Dimensions of the task

Phase 6: Monitor and Evaluate Implementation of Intervention

Q. What factors will be most effective to target for intervention?

INTERVENTION
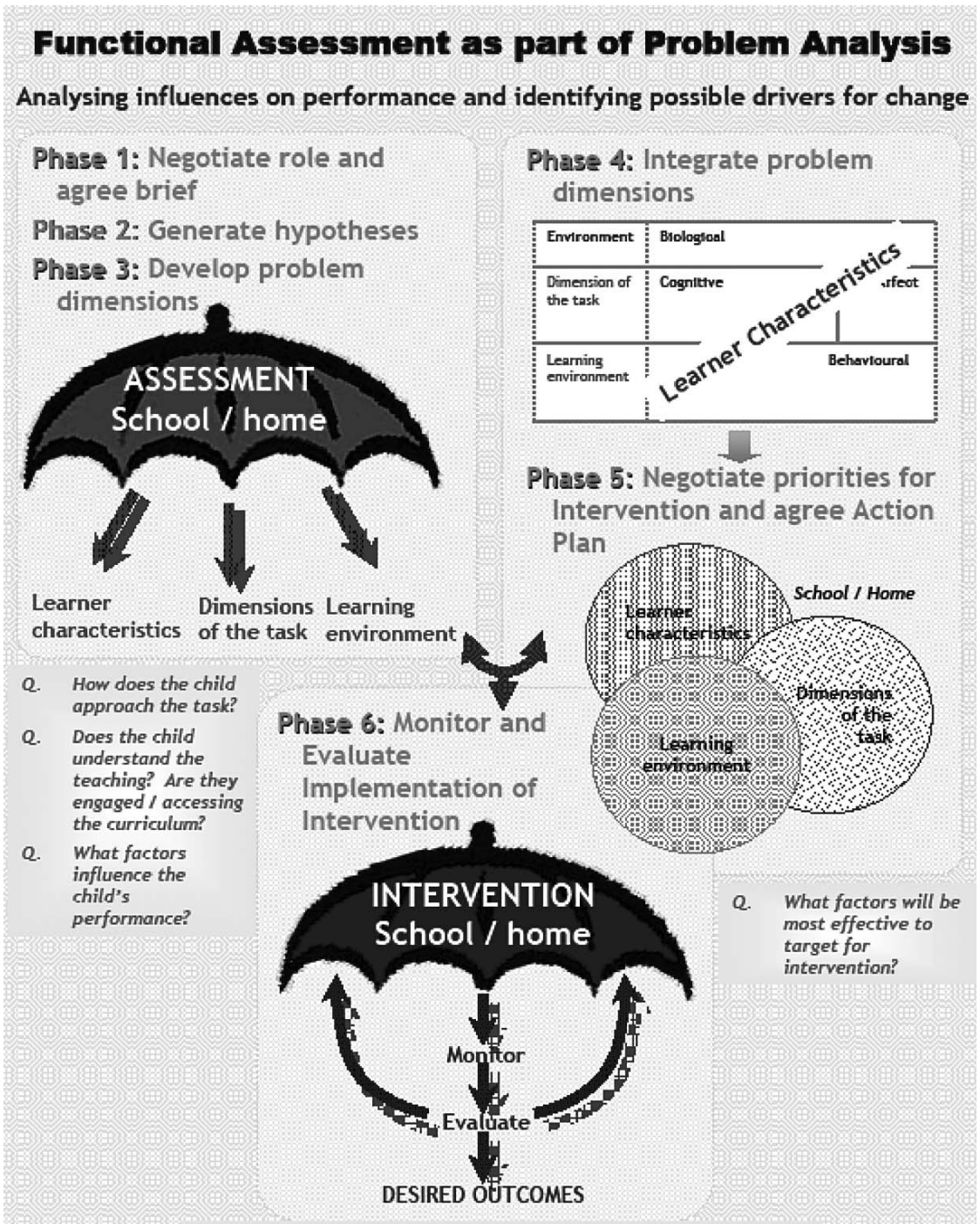School / home

Monitor

Evaluate

DESIRED OUTCOMES

FIGURE 11.3. Ecological-RTI application example.

methods should be revised and replaced by alternative hypotheses that are tested subsequently via ongoing data gathering and analysis. While the terminology differs, Stoner and Green are essentially describing the core elements of RTI.

Our central point is that RTI should be understood as an approach and process with the potential to provide meaningful, scientifically driven, data-based decision-making services to all students. While it can most certainly be used as a diagnostic tool in relationship to special education, restricting its application in this manner would nullify its enormous potential as a tool in the service of public health and prevention. RTI can play a significant role in addressing the educational and mental health pandemic described earlier if it is thought of as a tool with universal rather than restricted application. To do otherwise would be to squander our latest opportunity to serve America's school-aged populations.

11.7 Concluding Remarks

Much attention and recent debate regarding RTI has focused on definitional and eligibility issues; however, RTI represents a much broader reform initiative for assessment and intervention practices. Indeed, it is perhaps best conceptualized as a product of years of calls for reform. However, to meet the spirit of those calls for reform, RTI applications must also include consideration of the multiple contexts in which children learn and develop. RTI will require a significant change in practice, with new or sharpened skills needed not only in program evaluation, evidence-based practices, and direct intervention, but also in consultation, collaboration, multi-systemic assessment and intervention, and the integration of this information across time. These changes are long overdue. Paired with a systems-ecological framework, RTI is an incredible opportunity to bring about positive changes in assessment, intervention, collaborative partnerships, and student outcomes.

The centrality of the learning context for improving student outcomes can no longer be ignored (Christenson and Anderson, 2002). Fortunately, the remarkable opportunity through implementing an RTI model may serve as the essential stimulus needed for school psychologists to make a substantial contribution to learning outcomes for students.

These contributions would be reflected in improved treatment and ecological validity, the use of more evidence-based interventions, improved parent and teacher knowledge about how the child learns best (i.e., how and what we can do together to help child meet the demands of the school environment), and altering the learning environment to increase student opportunity and supports for learning. The focus on functional behaviors in RTI (both academic and behavioral comparisons to norms, grade-level expectations, or same-grade peers for measurable outcomes, like words read correct, rate per hour, and problems completed) serves as an entrée for building constructive relationships with parents.

Despite these contributions to children's learning, we must acknowledge that RTI, especially conceptualized from systems ecological theory, is in its inception. Systems change is difficult and, admittedly, the prospect of organizing and measuring the confluence of contextual variables involved in students' academic and behavioral performance is daunting. RTI with parents and teachers as change agents is more complex than the current, albeit deeply flawed, system of diagnoses and labels. Nevertheless, there are tools and problem-solving structures for beginning to address the complexity. We need to recognize that these are implemented as a science and as an iterative process with hypotheses and data-based decision-making. Because RTI provides a very important, fundamental message that we will work together to identify "what," "how," and "did it work" for the target student, school psychologists can fill in the gaps with respect to how different students learn best.

Sound research and scholarship are needed to advance the understanding and implementation of RTI. More specifically, however, research from a systems ecological perspective has lagged considerably behind theoretical work. Most studies fail to account for the interactional nature of social contexts, settings, and child development and are fairly narrow in scope (Boyce et al., 1998). Similar comments could be made regarding the state of RTI. Although there is a theoretical basis (i.e., hypothesis testing, problem solving) and initial models and studies that support RTI, it, too, requires additional scholarship in terms of implementation and student outcomes. Ellis (2005) suggests that evidence at three levels is needed to determine whether an educational innovation is not simply another fad, but

has enough research support to merit widespread use. First, the educational innovation must have a strong theoretical basis, derived from basic research in learning or behavior, or both. Second, it must have empirical support in real-world settings; and third, its effectiveness must be demonstrated in widespread implementation. As discussed throughout this chapter, implementing RTI using a systems ecological approach has strong theoretical support (Ysseldyke and Christenson, 2002). In addition, the implementation of RTI has been described in the literature (e.g., Iowa; Minneapolis Public Schools; Ohio; Horry County, SC). However, more research is needed to implement an RTI model that fully integrates the systems ecological perspective.

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[1] Email: s.dunsmuir@ucl.ac.uk

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