The role of school psychologists with training in neuropsychology is examined within the context of multitiered models of service delivery and educational reform policies. An expanded role is suggested that builds on expertise in the assessment of neurodevelopmental disorders and extends to broader tiers through consultation practice. Changes in federal legislation to allow more flexible approaches toward assessment are viewed as a catalyst toward the integration of neuropsychological practice in school-based practice. As a set of priorities, recommendations are made for reforming assessment practice in schools, linking neuropsychological test results to academic treatment outcomes, and developing consultation practice with parents and teachers for early identification purposes and to integrate school-based services with community mental health services.

Neuropsychology began through systematic observation of behavioral deficits as a result of brain injury. As such, neuropsychology was defined as the study of brain-behavior relationships with a primary focus in determining the presence or absence of brain injury and its localization (Dean, Woodcock, Decker, & Schrank, 2003). Partially due to the advent of brain imaging technology (magnetic resonance imaging [MRI], positron emission tomography [PET], regional cerebral blood flow [rCBF]), contemporary neuropsychology has focused less on localizing brain injury and more on measuring and documenting functional behavioral deficits (Dean, Woodcock, Decker, & Schrank, 2003; Reynolds & Fletcher-Janzen, 1997; Root, D’Amato, & Reynolds, 2005). Neuropsychology has been one of the fastest growing specialties within psychology (Hebben & Milberg, 2002), and neuropsychological measures have been found to be as accurate as many medical instruments and are frequently included in forensic evaluations (Lezak, Howieson, & Loring, 2004; Meyer et al., 2001).

School neuropsychology has emerged as a specialty for the application of neuropsychology in the schools (Hale & Fiorello, 2004; Miller, 2007). Components of school neuropsychological practice have been extended to educational interventions, collaboration, crisis services, consulting, research, development, and educational systems (Root et al., 2005). There is a tremendous need and interest to extend neuropsychology in the schools by school psychologists (D’Amato, 1990; D’Amato, Hammons, Terminie, & Dean, 1992).

However, school psychology training programs, while acknowledging the utility of neuropsychology, typically lack the personnel to provide training in neuropsychology and do not plan to provide such training in the near future (Walker, Boling, & Cobb, 1999). This problem appears pervasive in that neuropsychological knowledge is often not utilized in school-based practice because of a lack of familiarity with the neuropsychological literature both in school psychology practice (Hynd, 1981) and in school psychology training (Hartlage & Golden, 1990). Despite the interest, numerous factors, including adherence to behavioral approaches, have reduced the incorporation of neuropsychology into school psychology practice (Hynd & Obrzut, 1981).

Reduced topical representation of neuropsychology or neuropsychological topics can be found in the school psychology literature. Investigation of the number of neuropsychological research articles published in school psychology journals provides an indirect marker for examining such trends. Toward this goal, a search through seven of the major school psychology journals for research

The author acknowledges Jessie Carboni, Kim Oliver, and Katrina Johnson for their editorial work on this manuscript.

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articles containing the keywords “neuro*” (e.g., neuropsychology, neuropsychological, neuropsych) and “brain” was conducted between the years 1900 and 2007. Articles found from 1900 through 1980 were grouped together and then subsequently grouped by 5-year intervals up until 2006 through 2007. Table 1 displays the number of neuropsychological articles published along with the total number of articles published within the time period and the percentage of neuropsychological articles represented in each journal. As shown in the table, representation of neuropsychological topics has always been low across all journals with some increase around 1991 through 1995. After 1995, the trend appears to be on the decline rather than on the rise. Assuming that school psychologists develop topic familiarity by reading school psychology journals, familiarity with neuropsychology is unlikely to occur through school psychology resources. Similar results have been found elsewhere (Miller, 2007).

There are numerous reasons for the slow integration of neuropsychological research into school psychology (Gaddes & Edgell, 1994; Hale & Fiorello, 2004), despite the fact that school psychologists are ideally suited to be trained in neuropsychological methods (Miller, 2007). The precarious inclusion of neuropsychology in the schools and the relative lack of exposure to neuropsychological research are important to consider when evaluating educational reform policies and concurrent legislative changes in federal law.

**The Changing Practice of Psychology in the Schools**

Response to Intervention (RTI) has become the predominant model of school psychology service delivery. There is a lack of agreement in defining RTI. One model primarily represents a behavioral orientation of single-subject monitoring of academic interventions. However, this model is
typically embedded within a multitiered model that includes systemic changes in general education. As such, adoption of RTI requires a major change in role responsibilities of school psychologists in practice and training (Brown-Chidsey & Steege, 2005; Deno, 2002; Gresham, 2002; Reschly, 1988, 2000; Reschly & Ysseldyke, 2002; Tilly, 2002). Advocacy for RTI has already significantly impacted federal law, and RTI procedures are incorporated into the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEA) of 2004 (IDEA, 2004). Language used in the RTI approach emphasizes a shift away from individualized psychoeducational testing toward curriculum-based measurement (CBM) and behaviorally oriented procedures (Reschly & Ysseldyke, 2002; Tilly & Grimes, 1998).

Although RTI shows considerable promise, it has been intertwined with political and ideological preferences in educational reform (Holdnack & Weiss, 2006; Kavale & Forness, 2000). RTI has been viewed as an alternative to the Regular Education Initiative (REI) and the “Inclusion Movement,” which seek to discontinue or reduce special education funding and reallocate financial resources to regular education (Brown-Chidsey & Steege, 2005; Reynolds, 1988). RTI has been promoted by those who oppose categorical services that rely on norm-referenced assessment to discontinue assessment practice, particularly intellectual assessment (Gresham & Noell, 1999). Similarly, RTI has been promoted through antitesting sentiment used to discredit the use of norm-referenced measurements as a “wait to fail,” “test and place,” or “gatekeeper” enterprise (see Holdnack & Weiss, 2006 for a review). The incorporation of politically based sentiment in promoting RTI and discrediting individualized assessment practice has significantly impacted objective appraisals of both methodologies, and it is important for school neuropsychologists to be aware of these controversies.

Similarly, criticisms of diagnostic categories, particularly learning disabilities, are influenced by political and educational opinion, especially from those who wish to redistribute funding resources from special education to low-income children in general education (Fuchs & Fuchs, 2002; Fuchs & Young, 2006). For example, Ysseldyke et al. (1997) suggested that Specific Learning Disabilities (SLD) is a socially invented concept and that SLD and Low Achievement (LA) are identical (Ysseldyke, Alzozzine, Richey, & Graden, 1982). These conclusions have been challenged and found to be a result of methodology biases in a reanalysis of these data (Kavale & Forness, 1994), and subsequent longitudinal studies have reliably replicated the separation of SLD from LA groups (Short, Feagans, McKinney, & Appelbaum, 1986). Because of such controversies, the Learning Disabilities Roundtable (2005) has explicitly stated that the concept of SLD is valid and neurologically based (as well as that RTI is helpful, which is not a contradiction). Meta-analyses leave “no doubt” that such groups can be distinguished (Fuchs & Fuchs, 2002). Numerous neuropsychological studies have even documented neurological differences in activation patterns and morphological features in children with reading disabilities (Shaywitz, 2003), and advocates of children with learning disabilities have raised concerns (Mather & Kaufman, 2006). Nonetheless, the validity of SLD is continually questioned but done so primarily in the context of advocating for reform in education and school psychology (Gresham & Witt, 1997; Reschly & Ysseldyke, 2002). These conclusions are further promoted when school districts mandated to develop an RTI approach consult RTI resources (many of which contain antitesting and noncategorical advocacy as a rationale for implementing RTI).

As an additional caution, research validating the benefits afforded by RTI and problem-solving models is unclear. Positive outcomes promised by problem-solving models have been questioned (Telzrow, McNamara, & Hollinger, 2000), particularly because some pilot studies are over two decades old and still lack empirically defensible evidence (Naglieri & Crockett, 2005). Lack of empirically validated benefits has been found across multiple studies (Fuchs, Mock, Morgan, & Young, 2003). In a review of these studies, Fuchs et al. (2003) concludes that there is insufficient evidence for RTI approaches and the claim that such models are “scientifically-based” is unproven. In reviewing field studies, the National Joint Committee on Learning Disabilities (NJCLD) concludes
that many key questions on RTI have not yet been addressed (NJCLD, 2005). Similar conclusions have been made from other professions who do not have a political stake in the outcome (Graner & Faggella-Luby, 2005). Alarm about the widespread implementation of RTI approaches in light of the empirical data has been raised (Hale, Naglieri, Kaufman, & Kavale, 2004; Kavale, Holdnack, & Mostert, 2006; Naglieri & Crockett, 2005).

Although many legitimate criticisms of assessment practice have accumulated over the last 30 years, most problems are the result of faulty application of tests and over-reliance on simplistic single-dimension approaches (e.g., IQ-achievement discrepancy approaches) in making complex diagnostic decisions, which have proliferated in school psychology primarily for bureaucratic purposes (Mather & Kaufman, 2006). However, these criticisms have been exaggerated for the purpose of discontinuing individualized assessment practice, promoting RTI, or promoting educational reform (Kavale et al., 2006).

The point of this review is not to discredit RTI or problem-solving methodologies or to deny problems with assessment practice or SLD diagnosis. RTI has many benefits, and there are undoubtedly problems with assessment practice in schools. Sufficient evidence already exists to suggest that school psychology practice will, indeed, evolve more toward “curriculum specialists” providing general educational support using CBM with reduced emphasis in psychological assessment and disability services (Holdnack & Weiss, 2006; Reschly & Grimes, 2002; Reschly & Ysseldyke, 2002; Tilly, 2002; Ysseldyke et al., 1997). However, it is important to understand that this change in perspective may inadvertently provide a barrier to integrating neuropsychological services in schools. This change in focus will clearly impact the quality of individualized comprehensive assessment services provided in schools. Although it was not the intention of Congress to release schools from the requirements of individualized assessments, antitesting sentiment as part of RTI has led many scholars and state regulators to the conclusion that individualized evaluations using cognitive or psychological tests are of minor importance (Holdnack & Weiss, 2006). Importantly, theses criticisms and perspectives on assessment have been generalized to neuropsychological assessment, which is viewed as a set of techniques that simply extends assessment practice (Reschly & Gresham, 1989). As such, it is possible for neuropsychology to be systematically excluded during the implementation of RTI models.

**Strategy for Adapting to Change in School Psychology**

For school psychologists and neuropsychologists who specialize in assessment practice and wish to integrate neuropsychological methodology in school-based assessments, there are philosophical aspects of RTI, including antitesting sentiment and REI-based educational reform, that may serve as an impediment to integrating neuropsychology in the schools. However, there are also many aspects of RTI that may be viewed as a facilitator of neuropsychological assessment practice in schools.

School neuropsychologists have much to offer school psychology as it transitions toward mult tiered models. Toward integrating neuropsychological practice within the context of a multitiered system, consultation practice based on the expertise of neurodevelopmental disorders is recommended. Components of this practice include (a) school-based expertise in neurodevelopmental disorders, (b) reform guidelines for providing a comprehensive assessment informed by neuropsychological methodology for identifying neurodevelopmental disorders, (c) evidence-based methods for developing interventions informed by neuropsychological assessment for children with neurodevelopmental disorders, and (d) provide broad educational consultative services for teachers and parents on neurodevelopmental disorders. As supplementary goals, promoting contemporary research-based individualized assessment practices that approximate neuropsychological methods, promoting competency standards in individualized assessment, and supporting diversification and
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differentiation of school-based services for children with neurodevelopmental and other disabilities rather than the reduction of special services in schools are recommended.

As a basis for this argument, neuropsychology has relevance to almost every eligibility category specified in special education law. Clearly, children with traumatic brain injury or suspected neurological insult require neuropsychological services. However, many other conditions brought to the attention of school psychologists are known to have a neuropsychological basis. Broad consensus exists for the neurological basis of SLD that includes genetics (Decker & Vanderberg, 1985) and brain development (Gaddes & Edgell, 1994; Hynd, Semrud-Clikeman, & Lyytinen, 1991; NJCLD, 2005; Torgesen, 1991). The National Association of School Psychologists (NASP) position statement acknowledges SLD as the result of neurologically based deficits in cognitive processing (NASP, 2007). Similarly, contemporary research on attention-deficit/hyperactivity disorder (ADHD) indicates a neurological basis involving frontal lobe activation and dopamine neurotransmitter systems (Barkley, 1997). Often treatment of ADHD (see Goldstein and Naglieri, in this issue) involves stimulant medication, which acts on the neurotransmitter systems of the brain and is a prime area for school psychologists to develop RTI methods that establish the effective or ineffective utility of psychopharmacological treatments in children, which may include discontinuation and continuation guidelines for psychopharmacological treatments. Autism (see Allen, Robins, & Decker, in this issue) and other pervasive developmental disabilities are known to have a biological basis (Smalley & Collins, 1996). Other conditions (including mental retardation, seizures [see Titus et al., in this issue], depression, anxiety, fetal alcohol syndrome, cerebral palsy, Tourettes, etc.) are also known to have a neurological involvement. Finally, neuropsychology has significantly contributed to understanding all areas of academic achievement for typically and atypically developing children (Berninger & Richards, 2002)

Children with special needs are likely to increase in numbers and, thus, so will the need for expertise in understanding a biopsychosocial perspective and capability in distinguishing typical from atypical development (Miller, 2007). Concurrently, reduced federal funding for children with handicapping conditions require school districts to become responsible for a more intense level of care (Fletcher-Janzen, 2005). Here, RTI models are important in that more services are provided to more children without overwhelming special education. However, school psychology training, moving away from assessment, reduces the importance in identifying, and thus, understanding neurodevelopment. Regardless of whether or not RTI models are used, educational personnel rely on psychologists for guidance and an informed opinion in understanding these conditions. School psychologists with specialized training in neuropsychology are arguably not only the best prepared to provide individualized assessment in multitiered systems, but may also be the best prepared to function in consultation roles with educational personnel on atypical neurodevelopment in children. Additionally, school neuropsychologists are perhaps the best prepared to rapidly incorporate advancing research from multiple areas including medicine, psychopharmacology, and neuroscience, as well as psychology and learning theory to an educational context (Davis, 2006).

Reform in School-Based Assessment Practice

One obvious area where school neuropsychologists may contribute to reform efforts is assessment and testing practice in school psychology. School neuropsychologists have long awaited the opportunity to change assessment practice in the schools, but traditional educational law has been viewed as a barricade (McIntosh & Decker, 2005). However, recent changes in federal guidelines (IDEA, 2004) reduce adherence to mechanical approaches, such as IQ-achievement discrepancy, in assessment. Schools may not require an ability-achievement discrepancy and may permit alternative methods that are based on evidence and research. Furthermore, a “comprehensive evaluation,” although undefined, is still required. Because the multidisciplinary team may allow alternative
scientifically based methods depending on whether the team believes the method will make a contribution to the decision making of the team, disseminating scientific research on neuropsychological assessment to school psychologists and multidisciplinary team members in schools is of high importance for school neuropsychology advocates (Federal Register, 2006).

Concurrently, many assessment instruments used by school psychologists have been adapted for neuropsychological applications, which would facilitate the transition toward neuropsychological methodology. To name just a few, the Dean-Woodcock Neuropsychological Assessment System has been adapted for use with the Woodcock-Johnson Third Edition (Dean et al., 2003). The Wechsler Intelligence Scale for Children, Fourth Edition, contains an integrated model (Wechsler, 2003). The Kaufman Assessment Battery for Children, Second Edition, includes interpretive methods based on Luria’s method (see Horton & Reynolds, in this issue for a review of Luria’s theory). The Cognitive Assessment System (CAS) also involves neuropsychological concepts from Luria’s theory (see Goldstein & Naglieri, in this issue). For many school psychologists who have solely relied on the IQ-achievement discrepancy formula, becoming familiar with the neuropsychological applications of common instruments may be an opportunity.

Additionally, the Cattell-Horn-Carroll (CHC) theory of intelligence and its operationalization in a Cross-Battery Assessment procedure may also improve school psychology assessment practice and facilitate the integration of neuropsychological methodology in school-based assessments. The CHC model benefits from more than a half-century of validity research on psychometric, developmental, heritability, academic outcome, and neurocognitive evidence (Flanagan & Harrison, 2005; Flanagan & Ortiz, 2005; McGrew, Keith, Flanagan, & Vanderwood, 1997). The CHC model is a multitiered model of intelligence, with tiers typically referred to as strata I, II, and III (Carroll, 1997). The broad abilities of stratum II are functionally similar to constructs measured in neuropsychology, although labels used to describe the measurements may differ (Dean et al., 2003). For example, neuropsychologists are familiar with constructs like executive functions, with such tests as the Wisconsin Card Sorting Test, Halstead’s Category Test, and the Trail Making Test, whereas school psychologists use equivalent concepts, like fluid intelligence. Psychometrically, these constructs are highly related but may differ in theoretical specifications (Decker, Hill, & Dean, 2007). The CHC and Cross-Battery Assessment approaches shift assessment practice from IQ composites to neurodevelopmental functions. This transition can be facilitated by training in contemporary psychometric models (Flanagan, Ortiz, & Alfonso, 2007). Furthermore, integrating Cross-Battery Assessment approaches within a global hypothesis-testing approach (Hale & Fiorello, 2004) may provide the best “alternative” method that meets federal requirements for a comprehensive evaluation.

Perhaps more importantly than shifting measurement techniques, neuropsychological approaches facilitate a conceptual shift in thinking about assessment practice. Neuropsychologists place more emphasis on the measurement of neurodevelopmental functions. As such, broad global composites, such as IQ, have long been known to have little utility (Lezak, 1988). Consequently, neuropsychologists have relied more on functional deficits (e.g., phonological processing) to explain academic problems (e.g., reading) rather than IQ-achievement discrepancies. Interventions, when conducted, are targeted based on the specific functional deficits contributing to an academic problem. Such methodology provides greater specificity in constructing interventions. Additionally, it provides a neurocognitive language, such as rapid lexical retrieval or sequential visual scanning, as the intervention target that would otherwise remain elusive. Without such a language, intervention design will remain a blunt tool generally targeted at global academic constructs.

Another related area for reform is educational diagnostic coding. Diagnostic coding based on more homogeneous grouping of children by functional deficits is an essential goal for any treatment approach. Current eligibility categories serve more as administrative rather than diagnostic purposes (Wodrich & Schmitt, 2006). Ample work has been completed in determining subgroups

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from psychometric methods (Kamphaus, 1993; Morris et al., 1998; Rourke, 1989). Additionally, coding systems such as the Diagnostic and Statistics Manual Fourth Edition (DSM-IV) (American Psychiatric Association, 2000) or International Classification of Disabilities 10 (ICD-10) provide diagnostic labels which in turn provide access to empirically based research; educational classification, such as Emotional Behavioral Disturbance (EBD) or Other Health Impaired (OHI), do not. Changes in both assessment practice and diagnostic coding would also clarify many research areas including Attribute-Treatment Interaction (ATI), frequently cited as a criticism of assessment (Gresham & Witt, 1997; Reschly & Grimes, 2002), because overall composites such as IQ are used as attributes typically from a heterogeneous group, which significantly confounds ATI research (Speece, 1990).

Next, consideration should be given to quality control and defining professional competence in school psychology assessment practice. The majority of school psychologists are not trained in contemporary measurement procedures (Flanagan & Ortiz, 2005) and, given the shift toward de-emphasizing training and practice in individualized assessment, it is unlikely that assessment training will improve without a corrective course of action. As previously mentioned, NASP's Blueprint clearly has difficulty incorporating assessment practice within their shared vision due to preconceived notions of assessment. The Blueprint describes assessment practice as "simple psychometrics" and contrasts such practice with NASP's preferred vision that "moves the profession away from sorting and sifting children, based on now discredited notions of fixed capacities to learn, toward a commitment to enabling institutions and individuals to realize their enormous capacities to grow, improve, and adapt more successfully (Ysseldyke et al., 1997, p. 12). It is unfortunate that such a contrast is made as assessment practice is not in contrast with helping children grow and adapt; institutions can be changed one mind at a time. Specialized credentialing beyond a general school psychology degree has been one suggestion to adapt to the widening differences in professional preparation (Reynolds & Hynd, 2005). Specialization may better ensure that appropriate assessment training is implemented for professionals with the important task of identifying and helping children with atypical neurodevelopment. This may also provide school psychology programs that do not wish to emphasize individualized assessment in training the freedom to concentrate on other procedures, such as CBM, but would appropriately prohibit unqualified students from providing assessment services in schools. In contrast, changes to school psychology assessment training that better integrates neuropsychological methodology could be required. Regardless, allowing the continued ineffectual use of testing practice provides no benefits to children, school psychology, or assessment practice. Also, whether through credentialing or training, distinctions need to be made in the type of services provided by school psychologists within a multitiered model. RTI training procedures, which use achievement probes such as word reading rate, report results under the label of "Psychological Evaluations" (Brown-Chidsey & Steege, 2005). Reporting CBM data as a "psychological evaluation" confuses and misleads school personnel by suggesting that academic support constitutes psychological services. Additionally, such practice raises numerous ethical issues because RTI data, in most circumstances, can be obtained without parental consent, which means that a child would have on file a psychological report without parent notification or consent. More appropriate distinctions, such as "Instructional Report" or "Curriculum Monitoring Report" should be made in multitiered service models to distinguish these services.

Consultation in School Neuropsychology

Consultation has been viewed as an important function for school psychologists (Gutkin & Curtis, 1999; Meyers, Meyers, & Grogg, 2004) and as the new primary role of school psychologists as the need to work with individual students has become secondary (Ysseldyke et al., 1997). Consultation has also been suggested practice for school neuropsychologists as well (Hale & Fiorello, 2004; Hynd & Obrzut, 1981; Root et al., 2005). However, school neuropsychology consultation
practice has been limited in schools, perhaps due to the continued perception that neuropsychological knowledge is only relevant for brain injury cases (Hynd, 1981). Additionally, consultation practice has not been a systematic area of research in school neuropsychology. Within a multitiered model, consultation may also be a primary role for school neuropsychologists.

The rationale for advocating for school neuropsychologists’ expansion in consultation is based on the following principle: To prevent or intervene on a condition, one must be able to identify and understand the condition. School neuropsychologists with integrated training from multiple disciplines, knowledge of distinguishing atypical from typical development, and knowledge of how neurodevelopment disorders uniquely manifest in a single individual, are the logical choice of expert for consultation in early prevention programs. Knowledge of neurodevelopmental conditions affects how early screening efforts are conceptualized. For instance, early identification at Tier I of a multitiered system primarily focuses on universal screening with academic probes (Derr-Minneci & Shapiro, 1992; NASP, 2003; Shinn, 1995). As an example, letter or word fluency measures from Dynamic Indicator of Early Literacy Skills (DIBELS) are frequently used for this purpose. This makes sense if one views developmental conditions, like SLD, as a result of faulty learning. However, neuropsychological research has long known that sensory-motor, tactile, and perceptual measures provide the best early detection of a neurodevelopmental disorder (Blumsack, Lewandowski, & Waterman, 1997; Dean et al., 2003; Ellison & Semrud-Clikeman, 2007; Reitan & Wolfson, 2003; Rourke, 1989; Rourke & Strang, 1978). Academic content measures have significant individual variability at earlier age ranges making it almost impossible to determine which child is typical versus atypical. These measurement issues also impact the base-rates, sensitivity, and specificity of the instruments used (Franklin & Krueger, 2003), which is not considered in most screening approaches.

The evolving model for school psychologist involvement in broad educational screening (Tier I) of all children with academic probes requires significant time investment that includes personnel training and coordination, test administration, and data management, which is why school psychology training appropriately calls for a new model of practice. However, it is evident that such a model will have less time for developing assessment practice. As an alternative for school neuropsychologists, a model involving differing levels of consultation involvement with teachers is recommended. Teachers spend the most time interacting with children and intuitively sense when a child’s behavior deviates from the local norm. However, teachers’ intuitions are often sensitive for atypical development but not specific for any particular condition. Teachers need ready access to a professional capable of verifying their intuitive concerns. Consultation practice in school neuropsychology may first begin by supporting teachers in identifying critical signs and symptoms of particular neurodevelopmental disorders. Educating teachers on appropriate signs and symptoms at different age ranges helps to clarify referral concerns which serve to reduce over- and under-referrals. Teacher behavioral checklists or rating scales provide rapid screening of core symptoms of different neurodevelopmental conditions and help clarify referral concerns. Rating scales can include discriminant validity to control for over-responding. By not testing every child, base-rate and false-positive identifications become less of a concern. This approach helps legitimize the teacher’s concern rather than, inconsequentially, blame the teacher’s instructional methods (which reduces referrals but for the wrong reasons). Additionally, this approach does not require substantial changes in training practice to maintain a focus on neurodevelopmental conditions.

Future school neuropsychology research may explore different methods of incorporating signs of neurodevelopmental disorders within formal and informal teacher consultation practice. Additionally, multitiered models should ensure that children with severe neurodevelopmental conditions (e.g., autism) are appropriately detected early and not routed through multiple layers of academic monitoring when more intense and nonacademically based interventions are warranted (see Allen,
Robins, and Decker, 2008). Upon detection of early warning signs of neurodevelopmental conditions, follow-up observations by an individual trained to distinguish atypical from typical development or formal assessment may be warranted. Finally, school neuropsychologists may consult in the implementation of early screening procedures to ensure that relevant evidence on neurodevelopmental and included in early screening procedures. Ensuring relevant neurodevelopmental evidence, such as language or sensory-motor delays, is collected will prove beneficial in clarifying diagnostic decision making if needed at Tier III.

Parent consultation is another important area for school neuropsychologists. Distinguishing diagnostic conditions and providing accurate diagnostic feedback provides one of the most important, but frequently discounted, benefits to parents (Wodrich & Schmitt, 2006). School psychologists who lack the training in neurodevelopmental conditions not only may be unable to identify such conditions but also may feel uncomfortable providing feedback to parents concerning their child’s developmental status. Parents, who often know there is a problem but are unable to name it, are increasingly overwhelmed with invalid information of “fad” research, but are desperate to try anything. Diagnosis empowers parents. Explaining to parents that their child has a reading problem because he or she only reads 25 words per minute does little to help the parents understand the problem. Conversely, telling parents that their child has a reading disability due to phonological processing allows parents to become self-directed allies in the intervention. With such information, some parents even become consumers of empirical research published in journals. Diagnostic explanations help to distill faulty attributions of the problem developed by both parents and teachers. Given the neuropsychological underpinnings of many disorders, school neuropsychologists are in a primary position to help parents understand the complexities of their child’s problem.

Empowering parents in mental health service delivery in school is a primary concern. As much emphasis is placed on how “schools” misclassify students, which leads to excessive legal issues, a model based on providing options in services to parents and allowing parents to make decisions determined by the child’s unique needs is preferred. Individualized assessment practice helps parents understand a child’s unique needs and also functions to determine which options are available or not available for parents. Assessment based on functional skills can be linked to a range of appropriate services that vary in intervention intensity, degree of inclusion, and financial need. During eligibility, parents could be presented with a range of options and an agreement should be made on the type of service to be given rather than what diagnostic classification to make to obtain services (i.e., Do you want to call your child SLD or MR?). Parents may choose to not accept services, with an understanding that the child is obligated to abide by the rules of the general classroom without exception; request that an initial in class intervention be attempted; or choose the most intense form of intervention permitted by the diagnostic placement. Obviously, greater ranges of services may be provided for children with greater functional deficits, like mental retardation, than for children with SLD, so long as the service is justified by the assessment data. Essentially, parents, not schools, have the right to choose from the education interventions and/or mental health services provided by the school. Discontinuing special education, as an extreme form of RTI, reduces or eliminates choices. Although parents have the responsibility for choosing mental health services, schools have the responsibility for appropriately providing such services. Providing direct and accurate information concerning a child’s neurodevelopmental status and corresponding risk factors not only informs this process but is ethically needed to help parents make an informed choice.

Evidenced in the frustration of many parents from the lack of services in schools, integration of community and private mental health services with school services is another important area of leadership for school neuropsychological consultation. Viewing assessment as a form of advocacy for children with disabilities (Mather & Kaufman, 2006), creative solutions are needed to prepare for not only the reduced funding for children with special needs in schools but also with the reduced
expertise in school psychologists and other educational personnel in identifying and intervening in the care of children with neurodevelopmental problems. In the short term, consideration should be given to supporting and further differentiating special education and mental health services in schools, rather than how to narrow or discontinue it. In the long term, an integration of private, community-based mental health services with school-based services may be considered. Providing methods of integrating standard federal funding with individualized services supplemented by parents or government subsidies helps to empower parents to obtain services in addition to or beyond services provided in schools. Whereas schools are unable or unwilling to provide services for financial reasons, augmenting services based on additional funding such as insurance or personal payments could be an option and a new way for parents to obtain improved mental health services. Empowering parents with choices concerning the mental health services in schools reduces many limitations faced by both schools and parents. Additionally, many of the controversies in the literature that are bogged down by political and philosophical opinion on what procedures or interventions best benefit children can be enhanced through a responsibly implemented market-driven service delivery model with parent choice at its core. School neuropsychologists are in an important position to facilitate partnerships with schools that involve universities, mental health providers in the community, medical facilities, and psychologists in private practice to help deliver such services. Integration of such services may help relieve schools from some of the financial burden in providing mental health services, which is partially driving current educational reform seeking to discontinue or limit special education. Partial privatization of school-based services provides a competitive basis that rewards more effective methods that are not being resolved in the school psychology literature. This context provides similar conditions in which clinical neuropsychology has emerged as a valuable profession and may do so similarly for school neuropsychologists.

CONCLUSION

Just as general neuropsychology has witnessed tremendous growth based on the capability to meet the needs of patients, clinicians, and researchers by a willingness to change and adapt to new demands (Costa, 1988; Johnstone, Coppel, & Townes, 1997), school neuropsychologists must do the same. This article reviewed a proposal for adapting school neuropsychology practice within an evolving and changing school psychology context toward multitiered service delivery. School neuropsychologists face both challenges and opportunities from this change. School neuropsychologists, or school psychologists with neuropsychology training, may primarily contribute to education by providing expertise in assessing and identifying neurodevelopmental disorders and conditions. Changes in federal regulations provide a window of opportunity to reform assessment practice in school psychology toward neuropsychological methodology. Assessment reform toward neuropsychological methodology provides opportunities for consultation in neurodevelopmental conditions. These suggestions for school neuropsychologists differ from standard school psychology multitiered models in that the first step is to implement quality assessment practice with evidence-based decision making that begins with individual assessment and radiates outward to classroom interventions and consultation in general education in a sequential order. Neuropsychological training and knowledge is needed to reinforce the core of school psychology practice and specialized credentialing that distinguishes different approaches to providing psychological services. This model is viewed as complementary to multitiered RTI models advocated by many school psychologists and would better accommodate some school psychologists who may wish to more fully devote their time toward specializing in curriculum design and intervention. School neuropsychologists with training that faithfully represents the complexities of behavior at different levels and an insight into the workings of cognition at the neural level have much to offer educational services and the field of school psychology.

Psychology in the Schools DOI: 10.1002/pits
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