Abstract Title Page
Not included in page count.

Title: *Online Universal Screening and Behavioral Progress Monitoring: Assessing Social Validity, Usability and Intent to Use by K-3 Teachers*.

Author(s): Jeffrey Sprague[1], Jordan Pennefather[2*], Jessie Marquez[2], Pamela Yeaton[2], Brion Marquez[2].

1 - College of Education, University of Oregon, Eugene, Oregon, USA.
2 – Iris Educational Media, Eugene, Oregon, USA

* Contact Author. Email jpennefather@irised.com

Emails of Authors:

Jeffrey Sprague: jeffs@uoregon.edu

Jordan Pennefather: jpennefather@irised.com

Jessie Marquez: jmarquez@irised.com

Pamela Yeaton: pyeaton@irised.com

Brion Marquez: bmarquez@irised.com

Abstract Body

Limit 5 pages single spaced.

Background / Context:

More and more children and youth are bringing to school well-developed patterns of adjustment problems in behavior and academics. Antisocial behaviors emerge as early as school entry in kindergarten (Hamre & Pianta, 2001; Walker, Colvin, & Ramsey, 1995), tend to be stable (Richman, Stevenson, & Graham, 1982), and are likely to increase in severity over time (Walker, 1995). Children who enter school with social behavior problems such as oppositional behavior and aggression are at elevated risk for continued social difficulties throughout elementary school (Campbell & Ewing, 1990; Mesman, Bongers, & Koot, 2001) and for exhibiting antisocial behavior during adolescence (Loeber, 1990; Moffitt, 1993; Patterson, Reid, & Dishion, 1992). There are well-documented connections between problem behavior during the school years and (a) poor academic achievement (McIntosh, Chard, Boland, & Horner, 2006), (b) negative academic impact on peers (Sprague & Walker, 2005; Battin-Pearson, et al., 2000) (c) negative outcomes into adulthood (Catalano & Hawkins, 1996; Hawkins, et al., 2000), and (d) aversive school climate and culture (Gottfredson & Gottfredson, 1985).

There is empirical evidence demonstrating that school settings that manage behavior and maintain a well-developed social climate have a great impact on children's social and academic development (Biglan et al., 2003; Gottfredson et al., 2000; Hawkins et al., 2000). Studies demonstrate that behavior programs have a positive effect on variables linked to academic performance, e.g. student attendance (Luiselli, Putnam & Sunderland, 2002), time in school due to reduced exclusionary disciplinary practices (Putnam, Handler, & O'Leary-Zonarich, 2003; Scott & Barrett, 2004), classroom instructional time (Putnam, Handler, Rey & O'Leary-Zonarich, 2002), and academic engagement (Putnam, et al., 2003). Improved behavior support has been linked to improved academic outcomes (Larsen, Steele, & Sailor, 2006; Luiselli,Putnam, Handler, & Feinberg, 2005; Putnam, et al., 2003). Schools that implement school-wide behavior support show greater academic improvements compared to schools where school-wide behavior support were not implemented (Horner, Sugai, Todd, & Lewis-Palmer, 2005, Larsen, et al., 2006, http://www.4j.lane.edu/ess/ebs/data.html).

The earliest school years (grades K through 3) provide an optimal environment in which children can acquire valuable social skills, develop social competence, and practice other positive school-related behaviors that are foundational to successful academic experiences. Early elementary **t**eachers are ideally positioned to help their students develop these essential skills. Yet despite the substantial evidence that effective behavior management practices promote desirable social and academic behavior, schools often fail to provide adequate training for teachers and staff in this arena (Gottfredson & Gottfredson, 2001; Sprague & Golly, 2004; Sprague & Horner, 2006; Sprague & Walker, 2005; Walker, Colvin, & Ramsey, 1995).

Professional development using one-day inservice training is the standard mechanism by which school districts provide on-going training for their teachers, however several limitations exist. The standard model of one-day training by an expert does little more than promote awareness or motivation, and does little to affect teacher behavior skills development (Bransford, et al., 2000; Colvin, Kame'enui, et al., 1993; Hall & Hord, 2001). Secondly, several researchers have reported that change is not an event (i.e., in-service activity) but is a *process* of ongoing support, modeling, monitoring, and feedback (Cuban, 1990; Guskey, 1986; Hall & Hord, 2001; Hall, George, & Rutherford, 1986). Thirdly, in-service activities are often designed to provide a short-term focus, although long-term implementation is needed to elicit successful, durable, and

substantial behavior or system change (Cuban, 1990; Hall & Hord, 2001; Smylie, 1988; Sugai & Horner, 1999). Finally, in-service training is not always available to all staff due to a shortage of qualified trainers and lack of funds (Guskey, 1986, Joyce and Showers, 1995).

Long-standing reports and studies have pointed to the inadequacies of teacher training college programs (pre-service), specifying the following concerns: (a) the gap between what is taught and what teachers experience, (b) the lack of current contact and experience of college instructors with public school needs, (c) the gap between research and practice, (d) the lack of practical hands-on strategies, and (e) the inconsistent emphasis on training in classroom management from no instruction to high quality instruction (Archer, 1999; Blair, 1999; Bransford, Brown, & Cocking, 2000; CEO Forum on Education and Technology, 1999; Landau, 2001). One of the most disturbing aspects reflecting the inadequacies of pre-service training is the on-going problem of retaining teachers (Gonzalez, 1995; McCreight, 2000; Miller, Brownell, & Smith, 1999). Thus, there is an urgent need for effective and relevant training in several areas, especially in classroom management, at pre-service levels in teacher preparation institutions.

There is compelling support for early intervention efforts to prevent social adjustment problems (Zigler, Taussig, & Black, 1992). The earlier intervention begins, the more likely children are to receive long-term benefit (Ramey & Ramey, 1992). Ramey, Bryant, and Suarez (1985) conclude that young children are quite responsive to alterations in the quality of their environment and to educational efforts. These findings are supported by the longitudinal study conducted by Hawkins and colleagues (1999), which showed impressive reductions in antisocial behavior through early intervention.

McIntosh and colleagues (2006) recommend developing behavioral interventions within the context of an RtI model so that students are provided a continuum of instructional and behavioral support based on screening measures that indicate response to universal, selected, and intensive support. RtI is an iterative process that involves the use of tiered interventions and assessment to document changes in behavior and/or academic outcomes. RtI represents a thoughtful, child-centered approach for offering structured, early interventions through instruction and assessments of all students, including those at risk for school failure (NASDSE, 2007). Since the recent reauthorization of IDEA (Individuals with Disabilities Education Act, amended in 2004), RtI has become a major stimulus for discussion and action. RtI has primarily focused on academic problems and has been advocated as an alternative approach to special education disability determination and early intervention assistance for students who are academically unresponsive (Fuchs & Deshler, 2007).

Focusing on behavior with RtI for behavior, however, is also important (Sprague, 2006; Mcintosh et al., 2006). The RtI approach to behavior uses the identical three-tiered logic that is used for academics, and this ultimately simplifies the work of schools in both realms—academic and behavioral. If students are having a problem with learning, they are more likely than not (and sooner or later) going to present problems in behavior, and vice versa. So the effort to evaluate and intervene early on both fronts becomes mutually serving for students, families, and educators. The mirrored three-tiered structures allow schools to evaluate and intervene for both behavioral interventions and academic interventions in an integrated and efficient fashion.

RtI is successful when an infrastructure exists to support sufficient assessment and intervention resources to make decisions that result in successful outcomes for students. School staff must possess skills in the necessary assessment and intervention practices. Applying these skills requires that staff members have an understanding of evidence-based interventions and how to apply them to academic or behavior problems. Additionally, monitoring is needed to assure that

interventions are implemented with a high degree of fidelity. Teachers and support services personnel will also require the support of building and district administrators and staff to implement the RtI model. Support provided to teachers must extend through the implementation of interventions and the collection of appropriate data to assess student progress. Regarding social competence as a multi-tiered approach allows teachers to better integrate general and special education services, improve the classroom behavioral and instructional climate and be better able to identify and assist students who need greater supports (Sprague, Cook, Browning-Wright, & Sadler, 2008).

Purpose / Objective / Research Question / Focus of Study:

This session will describe the social validity, usability and intent to use of an interactive, state-of-the-art, professional development program based on the Response to Intervention (RtI) approach and its core components (e.g., problem-solving strategy; three tiers of intervention service delivery with universal, selected and intensive interventions as needed; and integrated data collection assessment system to inform instructional decisions at each tier of service delivery). We have completed initial development of the online program and have tested its use with a sample of K-3 teachers.

The Student Social Competence program is a behavioral intervention delivered within the RtI framework that provides teachers with effective instructional approaches for promoting children's social competence with the goal of improving the classroom learning environment and increasing instructional time. The program provides strategies and interactive tools for intervening at universal as well as at selective group levels, and for identifying students with disabilities or students needing more intensive, individualized supports. The program is supported by a Goal 2 Development grant from the U.S. Department of Education Institute of Education Sciences.

The Student Social Competence program acknowledges the parallelism between academics and social outcomes. Academic readiness skills are to academic performance as social skills are to social competence. In this context, social competence is a summative, evaluative judgment by key social agents (peers, teachers, parents) that one's behavior is socially effective. Social skills are the behavioral indicators that these social agents use in making their overall judgments regarding one's competence. In one sense, sociometric ratings and outcomes provide such judgments just as achievement tests and progress monitoring do for academic performance. The Student Social Competence program provides professional development training for teachers and curricular media materials for students. The program includes resources for school administrators and behavior teams/coaches that will allow them to implement, support, and monitor the use of this program, and to link the training to school district goals through the use of the Progress Monitoring tool (PMT). The PMT is an online measurement application that will allow teachers to: 1) conduct systematic universal screening for behavioral adjustment, 2) view the data in multiple formats (e.g. line graphs, histograms), 3) access tutorials on site usage, 4) access resources for working with students who need additional support, 5) notate their work with specific students, 6) generate reports and graphical displays of individual student response to the parent intervention, and 7) access links to evidence-based resources and interventions.

Setting:

Evaluation of the Student Social Competence program and the PMT has involved an iterative process which integrates development and research at every stage. The programs have

been evaluated by in-house usability testers, in-school usability testers, and by experts. In 2010, we performed a combined evaluation of the Student Social Competence program and PMT in 40 classrooms, with K-3 teachers.

Population / Participants / Subjects:
Forty K-3 teachers took part in the study. Teachers were recruited through partners at three local school districts in Oregon.

Intervention / Program / Practice:
Teachers were invited to a 2 hour in-service which explained the purpose and objectives of the study, the theoretical background of the student program and PMT, and provided instructions for the use the Student Social Competence program and PMT. Participating teachers were provided with instructions to obtain credentials to log onto the IRISed.com website as well as for the PMT. They were also provided with DVD copies of the student videos, master copies of the student activities and other resources. At the in-service, we collected consent forms, demographic information, and pre-test data.

The following week teachers were asked to show at least 3 of the student videos (Introduction and 2 skills videos). At the end of the week, the teachers used the PMT to do a universal screening of student behavior. Using the data provided by the PMT, teachers identified 2-3 students who needed additional supports with social skills. The next week teachers used the student videos and supplementary materials to provide the identified students with additional training and support. The teachers progress monitored these students once a day for a week using the PMT. At the conclusion of the week of monitoring, teachers completed the post-test questionnaire.

Research Design:
The evaluation employed a single-condition, pretest-posttest design. The study's single-condition design does not control for potential threats to internal validity (i.e., extraneous factors; Shadish, Cook, & Campbell, 2002). However, it is appropriate for development work. The single-condition design allows for the evaluation of feasibility without the added overhead required to conduct a randomized trial. The pre-post single-group study allows for evaluation of each component and offers the most cost-effective method for evaluating program feasibility.

Data Collection and Analysis:
Consent, pre-test data, and demographics of participants were collected via hard copy at the in-service. The post-test questionnaires were taken online on Qualtrics.

Pretest questionnaires contained questions about self-efficacy, concern, knowledge, and attitudes towards internet technology. The post-test questionnaire asked the participants about self-efficacy, knowledge, satisfaction with the program, and usability.

Findings / Results:
The analyses will be conducted to demonstrate feasibility and proof of concept, as well as social validity. Paired t-tests will be used to evaluate pre-post gains on the knowledge, attitudes, intentions, and self-efficacy. In an effort to examine potential differential effects amongst teachers, pre-post gain scores will be correlated with teacher demographic characteristics (e.g., teaching experience). Correlational, dose-response analyses will address some of the

shortcomings of the single-group, quasi-experimental design and bolster the confidence in the internal validity of the study. We will also test the hypothesis that teachers who report greater satisfaction with the program will have greater improvement in posttest gain scores.

Conclusions:

While many programs have been shown to be effective in research studies, much less is known about what it takes to get them implemented well in typical schools (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). There are several important questions to ask while selecting and designing behavioral interventions:

- Is there evidence of effectiveness? When looking at the research, it's important to ask if typical educators are capable of implementing the intervention effectively, or if the researchers got the effect only when they ran it.
- How much does the intervention cost? Interventions that are excessively costly are not likely to be used, or even tried. There also may be expensive, ongoing requirements to work with the developers of the program. Educators and administrators will want to carefully investigate the possibility of any hidden cost.
- How big an effect should I expect? Many evidence-based practices are considered effective even if the improvements are small. As such, it's important to ask if the practice is shown to have a large or small effect. Often with behavioral supports, changes are slow and small; unless they understand this and keep focused on the data, staff members can become frustrated with the results or the extra efforts required to carry out the intervention.
- Is there evidence of effectiveness (did typical people guide the intervention) vs., efficacy (did the researchers get the effect only when they ran it?). It is typical to conduct research studies guided by the developers (and often implemented by them) in order to demonstrate that an intervention can work. Once there is evidence of effectiveness, it is important to test the intervention in "real world" application in schools. The general finding is that adherence to the program will be lower in typical settings, and that the results obtained in the effectiveness trial will not be as dramatic. You should carefully consider this when selecting an evidence-based intervention.
- Can teachers integrate the intervention into their daily routine? This may be the most important question of all. Many educators are reluctant to adopt behavior support practices that do not fit with the daily life of our classrooms.

The primary aim of our formative research is to address these questions.

Appendix A. References

Archer, J. (1999). Teachers suggest the need for better training. *Education Week, 18,* 12.

Battin-Pearson, S., Newcomb, M. D., Abbott, R. D., Hill, K. G., Catalano, R. F., & Hawkins, J.D. (2000). Predictors of early high school dropout: A test of five theories. *Journal of Educational Psychology, 92,* 568-582.

Biglan, A., Mrazek, P. J., Carnine, D., & Flay, B. R. (2003). The integration of research and practice in the prevention of youth problem behaviors. *American Psychologist, 58,* 433-440.

Blair, J. (1999). Riley urges leaders to boost focus on teacher preparation. *Education Week, 19(3),* 22.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience and school.* (Expanded ed.) Washington. DC: National Academy Press.

CEO Forum on Education and Technology (1999). *Professional development: A link to better learning. The CEO Forum school technology and readiness report-year two* Washington. DC: CEO Forum on Education and Technology.

Campbell, S. B. & Ewing, L. J. (1990). Follow-up of hard-to-manage preschoolers: Adjustment at age 9 and predictors of continuing symptoms. *Journal of Child Psychology and Psychiatry, 31*, 871-889.

Catalano, R. F. & Hawkins, J. D. (1996). The social development model: A theory of antisocial behavior. In J.D.Hawkins (Ed.), *Delinquency and crime: Current theories* (pp. 149-197). New York: Cambridge University Press.

Colvin, G., Kame'enui, E., & Sugai, G. (1993). School-wide and classroom management: Reconceptualizing the integration and management of students with behavior problems in general education. *Education & Treatment of Children, 16,* 361-381.

Cuban, L. (1990). Reforming again, again and again. *Educational Researcher, 19(I), 3-13.*

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M. & Wallace, F. (2005). *Implementation Research: A Synthesis of the Literature.* Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network.

Fuchs, D. & Deshler, D. D. (2007). What we need to know about responsiveness to intervention (and shouldn't be afraid to ask). *Learning Disabilities Research & Practice, 22,* 129-136.

Gonzalez, P. (1995). *Factors that influence teacher attrition (INSTEP Information Brief)* Alexandria, V A: National Association of State Directors of Special Education (NASDSE).

Gottfredson, G. D. & Gottfredson, D. C. (1985). *Victimization in schools.* New York: Plenum.

Gottfredson, G. D. & Gottfredson, D. C. (2001). *Gang problems and gang programs in a national sample of schools* Ellicott City, MD: Gottfredson Associates, Inc.

Gottfredson, G. D., Gottfredson, D. C ., Czeh, E.R., Cantor, D., Crosse. S. B., & Westat, I. H. (2000). *National study of delinquency prevention in schools: Summary* Ellicott City, MD: Gottfredson Associates, Inc.

Guskey, T. R. (1986). Staff development and the process of teacher change. *Educational Researcher, 15,* 5-12.

Hall, G., George, A., & Rutherford, W. (1986). *Measuring stages of concern about the innovation: A manual for use of the SoC questionnaire.* Austin, TX: Southwest Educational Development Laboratory.

Hall, G. E. & Hord, S. M. (2001). *Implementing change: Patterns. principles and potholes.* Boston: Allyn & Bacon.

Hamre, B. K. & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72,* 625-638.

Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbott, R., & Hill, K. G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Archives of Pediatrics and Adolescent Medicine, 153,* 226-234.

Hawkins, J. D., Herrenkohl, T. I. , Farrington, D. P., Brewer, D., Catalano, R. F., Harachi, T. W. et al. (2000). *Predictors of youth violence.* Washington. DC: U S Department of Justice, Office of Juvenile Justice and Delinquency Prevention.

Horner, R. H., Sugai, G., Todd, A. W., & Lewis-Palmer, T. (2005). School-wide positive behavior support: An alternative approach to discipline in schools. In L.M.Bambara & L. Kern (Eds.), *Individualized supports for students with problem behaviors* (pp. 359-390). New York: Guilford Press.

Joyce, B. & Showers, B. (1 995). *Student achievement through staff development.* (2nd ed.) New York: Longman.

Landau, B. M. (2001). Teaching classroom management: A stand-alone necessity for preparing new teachers. Paper presented at the Annual Meeting of the American Educational Research Association (Seattle, WA) April 10-14, 2001.

Larsen, S. R ., Steele, M. M., & Sailor, W. (2006). The relationship of school-wide positive behavior support to academic achievement in an urban middle school. *Psychology Review, 43,* 701-712.

Loeber, R. (1990). Development and risk factors of juvenile antisocial behavior and delinquency. *Clinical Psychology Review, 10,* 1-41.

Luiselli, J. K ., Putnam, R. F., Handler, M. W., & Feinberg, A. B. (2005). Whole-school Positive Behaviour Support: Effects on student discipline problems and academic performance. *Educational Psychology, 25,* 183-198.

Luiselli, J. K., Putnam, R. F., & Sunderland, M. (2002). Longitudinal evaluation of behavior support intervention in a public middle school. *Journal of Positive Behavior Interventions, 6,* 182-188.

McCreight, C. (2000). Teacher attrition, shortage, and strategies for teacher retention. (ERIC Document Reproduction Service No. ED 444986).

McIntosh, K., Chard, D. J., Boland, J. B., & Horner, R. H. (2006). Demonstration of combined efforts in school-wide academic and behavioral systems and incidence of reading and behavior challenges in early elementary grades. *Journal of Positive Behavior Interventions, 8,* 146-154.

Mesman, J., Bongers, I., & Koot, H. M. (2001). Preschool developmental pathways to preadolescent internalizing and externalizing problems. *Journal of Child Psychology and Psychiatry, 42,* 679-689.

Miller, M. D., Brownell, M.T., & Smith, S. W. (1999). Factors that predict tcachers staying in, Leaving, or transferring from the special education classroom. *Exceptional Children, 65,* 201-218.

Moffitt, T. E. (1 993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychol Rev, 100,* 674-701.

Putnam, R. F., Handler, M., & O'Leary-Zonarich, C. (2003). Improving academic achievement using school-wide behavioral support interventions. Annual Conference of the Association of Behavior Analysis.

Putnam, R. F., Handler, M., Rey, J.C., & O'Leary-Zonarich, C. (2002). Classwide behavior support interventions: Using functional assessment practices to design effective interventions in general classroom settings. Toronto: Annual Conference of the Association of Behavior Analysis.

Ramey, C. T., Bryant, D. M., & Suarez, T. M. (1985). Preschool compensatory education and the modifiability of intelligence: A critical review. *Current Topics* in *Human Intelligence, 1,* 247-296.

Ramey, S. L. & Ramey, C. T. (1992). Early educational intervention with disadvantaged children: To what effect? *Applied and Preventive Psychology, 1,* 131-140.

Richman, N. L., Stevenson, J. E., & Graham, P. J. (1982). *Pre-school to school: a behavioral study.* London; New York: Academic Press.

Scott, T. M. & Barrett, S. B. (2004). Using staff and student time engaged in disciplinary procedures to evaluate the impact of school-wide PBS. *Journal of Positive Behavior Interventions, 6,* 21-27.

Shadish, W.R., Cook, T.D., & Campbell, D.T. (2002). *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton-Mifflin.

Smylie, M. A. (1988). The enhancement function of staff development: Organizational and psychological antecedents to individual teacher change. *American Educational Research Journal, 25,* 1-30.

Sprague, J. (2006). Yes, we get to do it here, too! RTI and Positive Behavior Supports. *The Special Edge, 19,* 10-13.

Sprague, J., Cook, C.R., Browning-Wright, D., & Sadler, C. (2008). *Response to intervention for behavior: Integrating academic and behavior supports*. Palm Beach: LRP Publications

Sprague, J. R. & Golly, A. (2004). *Best Behavior: Building positive behavior support in schools.* Longmont. CO: Sopris West Educational Services.

Sprague, J. R. & Walker, H.M. (2005). *Safe and healthy schools: Practical prevention strategies.* New York: Guilford Press.

Sprague, J. R. & Horner, R. H. (2006). School wide positive behavioral supports. In S.R Jimerson & M. J. Furlong (Eds.). *The handbook of school violence and school safety: From research to practice.* Mahwah, NJ: Lawrence Erlbaum Associates. Inc.

Sugai, G. & Horner, R. (1999). Discipline and behavioral support: practices, pitfalls, and promises. *Effective School Practices, 17,* 10-22.

Walker, H.M., Colvin, G., & Ramsey, E. (1995). *Antisocial behavior in schools: Strategies and best practices.* (1 st ed.) Pacific Grove. CA: Brooks/Cole Publishing Co.

Zigler, E., Taussig, C. & Black, K. (1992). Early childhood intervention. *American Psychologist, 47,* 997-1006.

Appendix B. Tables and Figures

Not included in page count.