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Systems of Individual Support:

The Functional Interventions in Versatile Environments Project's

Pilot Study of Evaluation Tools

DRAFT

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INTRODUCTION

The **F**unctional **I**nterventions in **V**ersatile **E**nvironments Project (Project FIVE) sought to (a) identify ways to assess and measure behavior support practices in schools, (b) develop systems that supported classroom teachers, and (c) facilitate sustainability positive behavior support systems for students whose behavior problems put them at risk for emotional and behavioral disorders (EBD) and/or school failure or exclusion (Colvin & Fernandez, 2000; Sugai, 2003). An ecological systems perspective (Bronfenbrenner, 1979) provided the conceptual framework for Project FIVE. "Bronfenbrenner's ecological systems theory emphasizes the child's interaction with the environment as an active process in child development. This model has three basic elements: (a) the person, (b) the context (where the behavior occurs), and (c) the processes that produce developmental change" (Wheeler, 1999, p. 80). Figure 1 illustrates how (a) the student who is in need of individualized positive behavioral support, (b) the classroom, (c) the school, and (d) the wider policies of the school district, are all related and inter-dependent within the perspective of ecological systems.

< Insert Figure 1 about here. >

In addition to having a focus on naturally occurring ecological systems, Project FIVE was interested in how districts and schools develop and sustain the four Positive Behavior Support (PBS) systems known as (a) School Wide System, (b) Non-classroom System, (c) Classroom System, and Individual Student System (Lewis & Sugai, 1999; Sugai & Horner, 2002; Sugai, Horner, Lewis-Palmer, & Todd, 2005; Tobin, in review, b; Todd, Haugen, Anderson, & Spriggs, 2002). In particular, the Individual Student System was of interest because of its importance for students with, or at risk for, EBD who are not sufficiently responsive to universal behavioral interventions (Tobin, Lewis-Palmer, & Sugai, 2002; Tobin, Rossetto Dickey, Horner, & Sugai,

in press). When Individual Student Systems of PBS are not implemented, such students often experience long term out-of-school suspensions or expulsion, and/or restrictive placements, or leave school early without graduating (Bear, 1998; DeRidder, 1991; Morrison & D'Incau, 2000; Raffaele Mendez, Knoff, & Ferron, 2002; Skiba & Peterson, 2000; Sughrue, 2003; Tobin & Sugai, 1999; Tobin & Sprague, 2002; Tobin, Sugai, & Martin, 2006).

Interest in positive behavior support for individual students with challenging behaviors has grown hand-in-hand with interest in three tiered (3 T) prevention models that include the use of universal interventions for primary prevention, targeted interventions for secondary prevention, and intensive individualized interventions for tertiary prevention (Horner, Sugai, Lewis-Palmer, & Todd, 2001; Scott & Eber, 2003; Walker et al., 1996; Walker & Shinn, 2002). Effective primary prevention reduces the need for secondary and tertiary level prevention.

Measuring Primary Prevention Systems

School reform efforts typically focus on primary prevention first and a number of tools, procedures, and models for measuring the implementation of the universal systems of school-wide PBS are available. The *Systems Evaluation Tool* (SET; Sugai, Lewis-Palmer, Todd, & Horner, 1999; Horner et al., 2004), measures the extent to which school-wide expectations are defined, taught, and positively reinforced; procedures for monitoring and responding to violations are developed; data is used for making decisions; and administrators provide leadership. Scott and Barrett (2004) measured the effect of SWPBS on increasing instructional time and reducing time lost to disciplinary procedures.

Although Non-classroom Settings and Classrooms are identified as specific systems, separate from the School-wide system, and these distinctions are particularly useful for focused staff development efforts, they are applications of the school-wide system. Self-assessment

measures of levels of implementation of the School-wide, Non-classroom, and Classroom systems at the school level, and of changes in these systems over time, are highly correlated (Tobin, in review-b). Examples of assessments of implementation of universal interventions in Non-classroom Settings (e.g., hallways, playground) include the use of empirical measures specific to school's action plans (Colvin, Sugai, Good, & Lee, 1997; Kartub, Taylor-Greene, March, & Horner, 2000; Lewis, Powers, Kelk, & Newcomer, 2002; Nelson, Colvin, & Smith, 1996; Todd, Haugen, Anderson, & Spriggs, 2002). Implementation of PBS in Classrooms, including two models of improvement and assessment were described by Palmer, Millen, and Reinke (2005, February, see http://www.pbis.org/Archived%20Presentations.htm). A self-assessment tool for classroom teachers striving to use PBS effectively in the classroom is available online http://www.pbis.org/Archived%20Presentations.htm (e.g., Sugai, 2005, November in Richmond, British Columbia, handout and PowerPoint are posted). Other presentations and reports on this topic include Lewis (2005, September, in Ames, Iowa, available online http://www.pbis.org/Archived%20Presentations.htm); Millen, Reinke, Lewis-Palmer, and Martin (2003); Reinke, Lewis-Palmer, and Martin (2003a, 2003b). In general, these measures provide information on a specific classroom or a specific non-classroom setting. A method for combining information about all, or a sample of, classrooms or non-classroom settings is needed to evaluate a school's Classroom or Non-classroom system of support. The PBS Staff Self-Assessment Survey (originally published as the EBS Survey in Lewis & Sugai, 1999; available for online data entry at http://www.pbssurveys.org/pages/SelfAssessmentSurvey.aspx; available for downloading at http://www.uoregon.edu/~ivdb/doc/resources_links/comb_ass_survey.pdf) is perhaps the best known way to do that as it collects information from all (ideally, in some cases, a sample of) school staff members and has scales for Classroom, Non-classroom, and School-

wide systems. In addition, it has a scale for the Individual Student Support system, which is not about primary prevention but rather, about secondary and tertiary prevention.

Measuring Secondary and Tertiary Prevention Systems

The list below shows items on the Individual Student Systems section of the PBS Survey:

1. Assessments are conducted regularly to identify students with chronic problem behaviors.
2. A simple process exists for teachers to request assistance.
3. A behavior support team responds promptly (within 2 working days) to students who present chronic problem behaviors.
4. Behavioral support team includes an individual skilled at conducting functional behavioral assessment.
5. Local resources are used to conduct functional assessment-based behavior support planning (~10 hrs/week/student).
6. Significant family and/or community members are involved when appropriate and possible.
7. School includes formal opportunities for families to receive training on behavioral support/positive parenting strategies.
8. Behavior is monitored and feedback provided regularly to the behavior support team and relevant staff.

As with the other PBS Staff Self-Assessment Survey scales, as a part of staff development activities or in preparation for developing school improvement and action plans, school staff members respond to each of these items in two ways: (a) by indicating if they think this element is “in place,” “partially in place,” or “not in place,” and (b) by indicating if they would rate its priority for improvement as high, medium, or low. Schools also sometimes use this tool annually to monitor progress and changing priorities. Improvement in the school’s average

percentage of staff members rating the items on the Individual Student Scale as “in place” was found to be associated with reductions in discipline referrals for fighting and aggression, and harassment in a study of 112 schools (Tobin, in review). In addition, out of school suspensions declined for the schools that improved on the Individual Student System scale. Having 50% or more (a majority) of the staff report that an element is “in place” has been found to be a reasonable goal, especially if the percentage selecting “partially in place” is much larger than the percentage selecting “not in place.” Providing formal training for families on behavioral support/positive parenting strategies was found to have the lowest level of implementation although considered a high priority for improvement by many teachers and administrators.

A different type of assessment of secondary and tertiary prevention efforts related to behavior problems is the Individual System Evaluation Tool (ISET; Crone, Hawkens, & Bergstrom, 2007), not to be confused with the Individual Student Systems Evaluation Tool (I-SSET; Lewis-Palmer, Todd, Horner, Sugai, & Sampson, 2006). The ISET was developed to measure fidelity of implementation of the process of using functional behavioral assessment (FBA) to develop Behavior Support Plans (BSP) for individual students as a part of a project in which ten schools participated during the three academic years between 1999–2002. The project emphasized training for school teams that included paraprofessionals, general and special education teachers, administrators, and sometimes school psychologists or other specialists. The ISET had six domains: Procedures Defined, Procedures Taught, Procedures in Active Use, Budget/Resources, Record Keeping, and Leadership. A Projects of National Significance Grant funded by the Office of Special Education Programs, U.S. Department of Education made it possible to provide financial incentives to the schools to encourage participation. Much of the training was done by a team of graduate students in School Psychology. The ISET was

administered after the first year of training and were used by the researchers to plan the next steps for training efforts. On average, over sixty percent of the features in the domains of Procedures Taught (92%), Procedures Defined (87%), Budget/Resources (75%), and Record Keeping (69%) were implemented. Procedures in Active Use (59%) and Leadership (50%) were the domains most in need of additional time and training for full implementation.

The *Individual Student Systems Evaluation Tool* (I-SSET; Lewis-Palmer, Todd, Horner, & Sugai, 2003; Lewis-Palmer, Todd, Horner, Sugai, & Sampson, 2006) is an evolving instrument. During the Project FIVE pilot, the I-SSET was revised several times, with wording being refined and additional items being added in response to experiences during the actual data collection and interpretation. However, core content remained the same during the Project FIVE years. Work on the I-SSET was a collaborative effort with other researchers and other projects. Project FIVE'S Institutional Review Board (IRB) protocol included approved informed consents for administrators, behavior specialists, PBS and BST team members and other school staff who participated in interviews and assisted with document reviews. Students were not directly involved. This report covers only a small portion of the work that has been done on the I-SSET. Other researchers are currently preparing other reports (e.g., on test-retest reliability and item by item analysis). Other versions of the I-SSET have been developed and a survey is currently underway addressing content validity of newer versions. However, the current report will address the content, issues, and findings of the I-SSET as it was used during the Project FIVE years.

The I-SSET had three scales: (a) Foundations, made up of items related to commitment to educate students with "more extensive problem behavior," team work, identification of students in need of support, and a process for monitoring and evaluating support; (b) Targeted Interventions (e.g., Behavior Education Plans such as those described in Crone, Horner, &

Hawken, 2004; First Steps to Success, Walker et al., 1997), with items about staff awareness of what type of support at the secondary prevention level exists, how quickly it can be accessed, and its characteristics, including how much time it takes to implement; and (c) Intensive Individualized Interventions (e.g., function-based support, see Crone & Horner, 2003; Wraparound Interventions; Eber, 1996; Eber & Nelson, 1997), with questions about evidence of quality and documentation of functional behavioral assessments (FBAs) and related behavior intervention plans (BIPs). The process of collecting answers to the questions includes an administrator interview and a behavior specialist interview. Also, about five teachers or other staff members are briefly interviewed and a sample of written documents related to individualized support are reviewed. These written documents might include records of assessments and plans for individual students.

Tools for assessment of individual students are not, in themselves, tools for assessment of systems of supporting individual students. However, the availability and use of these tools are components of systems of support. Therefore, when reporting a review of documents related to individualized support, the types of documents used should be noted. The *Functional Assessment Checklist--Teachers and Staff (FACTS)* is used in many PBS schools to begin the process of assessing the function of a problem behavior for the purpose of developing a BIP for an individual student (March et al., 2000, March & Horner, 2002; McIntosh et al., in press). The FACTS provides information useful for completing a *Competing Behavior Pathways* diagram (O'Neill et al., 1997) during the brainstorming and problem-solving steps in developing and refining BIPs (Condon & Tobin, 2001; Sugai, Horner, & Gresham, 2002). "Guess and Check" is a tool developed for teachers to use to develop function-based logic in planning classroom

interventions for individual students (Lewis-Palmer, 2002; see also materials posted by Anderson, 2006, at http://www.pbismaryland.org/SummerInstitute2006/Presentations/).

Another tool used in formative evaluation in PBS schools, this one to be completed by PBS team members, is the *Team Implementation Checklist* (TIC, Sugai, Horner, & Lewis-Palmer, 2001, http://pbis.org/tools.htm, http://www.sd742.org/pbis/EBSTeamChecklist.pdf), This tool had a focus on features of the school-wide system but includes two items to measure building capacity for function-based support: (a) “Personnel with behavioral expertise are identified and involved” and (b) “Plan developed to identify and establish systems for teacher support, functional assessment, and support plan development.”

Table 1 compares four measures of Individual Student Systems of Support. The PBS Staff Self-Assessment Survey and the TIC are available online (as described above). The I-SSET is currently being revised and a new version will be available later. Descriptions of items used in Project FIVE assessments are included in Table 1. A copy of the ISET is not available but a clear description of each item was given by Crone, Hawkens, and Bergstrom (2007) and those items are described in Table 1. The items from the other three instruments are not described in detail in the table, to save space. Please refer to the Appendix and the online documents for exact wording if needed for items from those three tools.

Table 1

Topics Covered on Four Measures of Individual Student Systems

Topic	**PBS Staff Self-Assessment Survey's Individual Student System Scale***	**TIC** Build Capacity for Function-based Support Scale**	**Individual Student System Evaluation Tool (I-SSET)*****	**Individual Systems Evaluation Tool (ISET)****** **Domains and Components**
Identification of students in need of extra support	#1		Discipline data used.	PAU: Teachers use form to make referral to FBA team and begin the FBA process in a timely manner.
Behavior support one of top 3 school improvement goals				L: One of the top 3 school development goals is behavior support.
Process for responding to teachers' requests for extra support	#2	#17	Includes problem behavior, antecedents, consequences, setting events, prior interventions, and other relevant information.	PD: FBA Team.exists, meets regularly, has a handbook explaining process for obtain assistance.
Process for responding to students with serious behavior problems is written.				PD: Materials on support process exist.
Speed of response of BST to requests for assistance	#3 (2 working days)		3 to 10 working days	
Behavioral expertise	#4	#16	Is available.	PD: Team leader an expert.
Use of local resources	#5 (~ 10 hr. per wk.)		FTE allocated.	B/R: School has allocated sufficient resources, including funding and personnel, for the FBA process. L: District provides FBA team with effective support.
Involvement of family	#6		Process for including family is documented.	PAU: Family members are included in the FBA process and receive a copy of the BSP.
Opportunities for families to receive training	#7			
				(Table continues.)

Topic	**PBS Staff Self-Assessment Survey's Individual Student System Scale***	**TIC** Build Capacity for Function-based Support Scale**	**Individual Student System Evaluation Tool (I-SSET)*****	**Individual Systems Evaluation Tool (ISET)******** **Domains and Components**
Monitoring of interventions and feedback to team and relevant staff.	#8		Specific person responsible; team knows support is monitored; staff know status of support; fidelity of implementation is monitored.	PAU: Teachers and related service personnel receive a copy of the BSP. RK: Administrator gathers data for follow-up of interventions, including student's Office Discipline Referral (ODR) data and maintains FBA /BSP records in confidential but central location accessible to relevant staff.
Administrator involved			Attends training and meetings. Identifies students in need of support.	PD & L: Administrator active member of FBA team & provides effective support. RK: Gathers data for follow-up of interventions, including student's Office Discipline Referral (ODR) data and maintains FBA /BSP records in confidential but central location accessible to relevant staff.
School-wide system in place			Foundations	
Professional development			Provided regularly.	PT: (a) Entire staff trained in behavior management/assessment, and how to make a referral to FBA team. (b) FBA team trained to conduct FBAs (training includes operational definitions, antecedent-behavior-consequence sequence; use of competing behavior pathways; how to develop, monitor, and evaluate BSPs. (c) Training involved follow-up practice with students in natural settings. (d) Number of hours of on-site consultation following initial training.
FBA related information on ODR form			Detailed as possible.	
Targeted intervention documented and known to staff			Written description matches verbal descriptions.	(Table continues.)

Topic	**PBS Staff Self-Assessment Survey's Individual Student System Scale***	**TIC** Build Capacity for Function-based Support Scale**	**Individual Student System Evaluation Tool (I-SSET)*****	**Individual Systems Evaluation Tool (ISET)******** **Domains and Components**
Characteristics of targeted interventions			Provides increased structure and is continuously available. Self-management. Frequency of feedback. Efficient. Modified on the basis of student data.	
Quality of FBAs		#17	Description of student's strengths, operational definitions, routines, maintaining consequence, summary, alternative behaviors, sources.	PAU: (a) information on antecedents, behaviors, consequences, (b) used archival records review, interviews, and direct observations, (c) identified function of problem behavior
Quality of Behavior Intervention/Support Plans (BIP / BSP)		#17	Operational definitions, FBA summary, strategies, reinforcement, safety/crisis procedures, system for assessing fidelity of implementation, system for assessing impact on student outcomes.	PAU: Function of problem behavior used to build BSP PAU: Implementing BSPs with fidelity
Behavior Support Team (BST) members			Includes individuals with knowledge of the student, the context, behavioral theory	
Identification of Student's strengths, preferences, and goals				
Decisions related to implementation of interventions based on student's progress		#17	Evidence that BIP decisions are based on student's progress.	RK: Data for follow-up of interventions includes student's ODRs and FBA /BSP records are confidential but accessible in a central location to FBA team members.

*Number of PBS Survey's Individual Student System item, as listed above.
**Number of TIC item as posted on http://www.pbsurveys.org/TeamChecklist/TeamChecklist1.asp
*** I-SSET, Version 1.3 (Lewis-Palmer, Todd, Horner, Sugai, & Sampson, 2006) as revised April 7, 2006; new revision underway.
**** Abbreviations for Domains of ISET: PD = Procedures Defined; PT = Procedures Taught, PAU = Procedures in Active Use, BR = Budget/Resources, RK = Record Keeping, L = Leadership (As described in Crone, Hawken, & Bergstrom, 2007, on page 19).

The I-SSET as it was used during the Project FIVE years will be the focus of this paper. Unlike the PBS Survey and the Team Implementation Checklist, but rather like the ISET, the I-SSET was intended to be a research tool, not a self-assessment measure. The purpose of this paper is to document the work done toward the I-SSET under the Project FIVE approved Institutional Review Board protocol, the methods used to assess validity of the I-SSET at that time, results, and lessons learned.

METHOD

Approach to Assessment of Validity

Messick's "Unified Approach to Construct Validity" (1988, p. 42) is commonly used to evaluate academic (e.g., Gersten et al., 1995; Messick, 1995) and behavioral measures (Irving et al., 2006; Tobin & Irvin, 1996). This comprehensive approach collects evidence that provides a basis for interpretations and use of the measure, consequences of implied values and of actual use of the measure. Messick's approach was used to clarify how office discipline referral measures can be used in research in schools (Irving et al., 2006; Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). Applying this approach to the I-SSET requires responding to questions shown in the Table 2 (adapted from Irving et al., 2006). Some, but not all, of the types of evidence listed in Table 2 are available from the Project FIVE Pilot Study of the I-SSET and from other research projects using the I-SSET. Most of the studies to date have produced evidence for interpretation, the first cell of the matrix shown in Table 2. The I-SSET is still under development. In part as a result of the pilot study, further revisions are expected, which is the natural outcome of a pilot study. The procedure to be followed at this time will be to answer the questions that can be answered now, to the extent that evidence is available, and to identify for future research the types of evidence still needed to answer the remaining questions.

Table 2

Questions and Types of Evidence for Messick's Approach to Validity to the Individual Student System Evaluation Tool (I-SSET)

Basis	Interpretation	Use
Evidential	*Question to be answered*: What is the empirical evidence justifying interpretations of the meaning of the I-SSET measures in schools?	*Question to be answered*: What is the empirical evidence justifying actual uses, usefulness, and social validity of the I-SSET measures in schools?
	Types of evidence sought: Traditional psychometric indices of content-related, criterion-related, and construct validity: (a) correlations with other measures, (b) Cronbach's Coefficient Alphas for scales, (c) differences across population groups (e.g., elementary, middle, and high schools), (d) factor analyses within and across measures.	*Types of evidence sought:* Empirical data on actual uses, users' perceptions of usefulness, social validity, sensitivity to program interventions.
Consequential	*Question to be answered*: What are the ethical and logical consequences of the implied values when I-SSET measures are	*Question to be answered*: What are the educational or social consequences of using I-SSET measures in schools? (Table continues.)

	interpreted in schools?	
	Types of evidence sought: (a) Analysis of ethical implications of interpretations of I-SSET measures, (b) Analysis of logical contributions to theory development related to behavioral support systems for individual students.	*Types of evidence sought*: (a) Cost/benefits analysis, (b) analysis of educational or social consequences of use of I-SSET measures in schools, (c) analysis of unintended side effects (if any) of use of I-SSET measures in schools.

Settings and Participants

I-SSET measures collected during the Project FIVE years provided information from 17[1] schools attended by a total of 10,645 students. The racial/ethnic composition of the sample was 2.21% Native American, 3.63% Asian or Pacific Islander, 2.23% African American, 8.16% Latino, and 80.01% White. Nine elementary schools and eight secondary schools (4 middle and 4 high) participated. School-wide PBS was being implemented in most of the elementary and middle schools and had recently been introduced in some of the high schools. All of the elementary schools met their goals for Adequate Yearly Progress (AYP) for No Child Left Behind, but none of the secondary schools did. However, this pattern has been reported to be related more to the smaller enrollments in elementary schools. According to Northwest Regional Educational Laboratory (2004), "Large schools are much less likely to make AYP than smaller schools because they are more likely to meet the minimum subgroup size for one or more subgroups

[1] Several different correlational analysis with other measures were conducted and all 17 schools were not always participating in all the measures involved every year. The number of participating schools will be given for each specific analysis in the results section.

(p. 5).” According to state department evaluations using whole school data, all of the schools, secondary and elementary, were at least adequate and most were rated as strong or excellent. This rating was based on a combination of academic (e.g., state achievement tests) and behavioral (e.g., attendance and drop out) measures on a 5-point scale ranging from “Poor” to “Excellent.” The schools were located in a northwestern state, with one school in a small town, one on the fringe of a mid-sized city, two were classified as rural but inside a Core Based Statistical Area (CBSA, a functional region around an urban center of at least 10,000 people), and 13 were centrally located in mid-sized cities. The average student to teacher ratio was 22.3 (*SD* = 3.05). The percentage of students eligible for free or reduced price lunches was 34.50% (*SD* = 16.75%).

RESULTS

What Is the Empirical Evidence Justifying Interpretations of the Meaning of the I-SSET Measures in Schools?

Cronbach’s Coefficient Alphas for Scales

Of the 17 schools that participated in work being done on the I-SSET at some time during the Project FIVE years, 13 had data for the analysis of the Foundations and the Targeted Interventions Scales. For the Intensive Individualized Interventions Scale, 12 schools provided data. For this sample, the Cronbach’s Coefficient Alphas for the scales were: Foundations, 0.74; Targeted, 0.96; and Intensive, 0.81. The higher the alpha, the more the items on the scale correlate with each other, indicating internal consistency for the scale. According to Achenbach and Rescorla (2001), alphas between 0.55 and 0.79 show reasonable internal consistency for scales “designed to tap a variety of competencies . . . [and not] univocal traits” (p. 102). Thus, the Targeted and the Intensive scales show quite high internal consistence and Foundations, which was indeed designed to tap a variety of competencies, shows reasonable consistency.

Some of the main scales were made up of sub-scales. In the version of the I-SSET used at this time, the Intensive Scale did not have any sub-scales. Within Targeted, Cronbach's Coefficient Alphas were calculated for the sub-scales: Connections to Foundations, 0.93; Assessment and Implementation, 0.93; and Monitoring, 0.59. The first two show very high internal consistency and the last shows reasonable internal consistency.

Within Foundations, the Cronbach's Coefficient Alphas were rather low for the sub-scales: Commitment, 0.39; Team Based Planning, 0.49; Student Identification, 0.10; and Monitoring and Evaluation, 0.51. It may seem curious that all of these together, as items in the Foundations scale, have a higher alpha than the sub-scales do. However, the number of items makes a difference. Scales with few times, unless the items refer to very similar competencies, tend to have low alphas (Achenbach & Rescorla, 2001). In creating a scale intended to represent a practice related to effective secondary or tertiary PBS interventions, the concern is to include important competencies, which may be related in terms of behavioral objectives, yet which may differ considerably in terms of skill or effort required to implement. Consider, for example, that the lowest alpha is for the sub-scale called "Student Identification." Apparently this set of items are not be closely related, at least in so far as they are being implemented, even if the content of each item can arguably be logically related to student identification. The items are:

C1. Does the administrator report that office discipline referrals (ODR) are regularly used to identify individual students who might benefit from function-based support?

C2. Does the ODR form have preliminary FBA information . . . ?

C3. Do 80% of the staff asked agree with the team leader on the process for requesting assistance?

C4. Does the behavior support team member report that at least 4 of 5 of the most recent requests for assistance received support within 10 school days of the request?

C5. Does the request for assistance process include elements of function-based information . . . ?

The correlation matrix for these items is shown in Table 3. The number of schools with data for this analysis was 13, which may be why, in part, none of the correlations were statistically significant ($p < .05$), although even with the same relatively small *n*, correlations within sub-scales with higher Cronbach's Coefficient Alphas often were statistically significant ($p < .05$).

Table 3

Correlation Matrix for Student Identification Scale

	C1	C2	C3	C4	C5
C1	1.00				
C2	0.49	1.00			
C3	0.02	0.27	1.00		
C4	-0.06	0.18	0.43	1.00	
C5	0.30	0.08	-0.34	0.39	1.00

The average scores and standard deviations for these items are shown in Table 4. Note that although the average scores are fairly high (2 was the maximum possible), the standard deviations indicate considerable variation among the schools.

Table 4

Average Scores and Standard Deviations for Items in the Student Identification Scale

Item	Average Score	Standard Deviation
C1	1.69	0.63
C2	1.84	0.38
C3	1.77	0.44
C4	1.38	0.96
C5	1.61	0.65

Note: The highest score possible is 2.

Correlations with Other Measures

A school's overall score for each of the three main scales on the I-SSET is calculated by adding up the points recorded for each item, dividing that by the total points possible, and multiplying by 100 for the percentage of possible points (with two points possible for each item). The average scores and standard deviations for are shown in Table 5.

Table 5

Average Scores for Foundations, Targeted, and Intensive Scales

Scale	Average	Standard Deviation
Foundations	81	14
Targeted	73	28
Intensive	62	29

PBS Staff Self Assessment Survey's Individual Student System "In Place"

For the schools that provided both I-SSET and PBS Survey Individual Student System Scale "In Place" data for the 2004-2005 academic year (n = 14), Pearson Correlation Coefficients were calculated. "In Place" refers to the percentage of responding staff who recorded on the Staff Self-Assessment PBS Survey that the Individual Student System was "in place" rather than "partially in place" or "not in place." If a majority (> 50%) of the staff say that it is in place, probably it is being implemented fairly well as seldom will 100% of the staff agree that it is fully in place as another possible response option was "partially in place." For these schools, the average "in place" score was 56 (SD = 17). The correlations indicate that if the "in place" score was high, all of the I-SSET scale scores were likely to be high, particularly the Intensive Scale score. Within the I-SSET scales themselves, Foundations and Intensive are more closely associated, in terms of how well they are judged to be implemented by trained I-SSET data collectors, than either are to the Targeted Scale. However, if the Targeted Scale score was high, the "In Place" score on the Individual Student System on the PBS Survey also tended to be high. The Individual Student System on the PBS Survey does not make a distinction between secondary and tertiary interventions for individual students in need of extra behavior support. Thus, if a school is doing well in terms of providing either Targeted or Intensive Individual Student interventions, or both, likely the staff perception is that the school does have a support system for individual students who need more than the universal behavioral interventions. The correlations for these measures are shown in Table 6.

Table 6

Correlations Among the I-SSET Scales and with the PBS Survey Individual Student System

	In Place	Foundations	Targeted	Intensive
In Place	1.00			
Foundations	0.61*	1.00		
Targeted	0.68**	0.37	1.00	
Intensive	0.77***	0.76***	0.38	1.00

*$p < .05$. **$p < .01$. ***$p < .001$.

Items on the PBS Staff Self Assessment Survey's Individual Student System

Correlations among specific items on the PBS Survey Individual Student System scale (see Appendix) and the I-SSET Intensive Individualized Interventions scale were studied (Table 7). The items are identified by their number on their respective surveys and one key word or acronym. Codes for the seven I-SSET items begin with H. The 4th item (H4 Team) is not listed because it had no variability. That item asked if the BST Team included individuals with various sorts of knowledge (e.g, about the student, the context, behavioral theory, specialized areas if needed) and all of the schools received a perfect score for that item.[2] Codes for the eight items from the PBS Survey begin with IS, followed by their number and one key word. In Table 7, the "status" aspect of items from the PBS Survey, coded as 2 for "in place," 1 for "partially in place," and 0 for "not in place" are correlated with the score assigned by the trained data collector evaluating the fidelity of implementation of the practices on the I-SSET, with the highest possible score for each item being 2. The individual item level data needed for this analysis was available for 6 schools, all elementary schools actively involved in trying to

[2] Lack of variability because of perfect scores is desirable in reality but it is not useful for calculating correlations as they depend on being able to rank respondents from high to low. It is the ranking order that is being compared.

improve their use of secondary and tertiary interventions and all schools with high scores on the SET for several years (i.e., already proficient at providing universal school-wide PBS). Given the small *n*, probabilities less than 0.10 are indicated as possibly indicating associations that may of interest in future research with larger sample sizes.

Table 7

Items on the Intensive I-SSET Scale and PBS Survey Individual Student System

	H1 FBA	H2 BIP	H3 Data	H5 Document	H6 Agree	H7 Strengths
IS1Assess	0.64	0.81†	0.89*	-0.62	0.63	-0.24
IS2 Request	0.31	0.37	0.76†	-0.51	0.96**	-0.32
IS3 Promptly	0.79†	0.61	0.94**	-0.82*	0.67	-0.46
IS4 Expert	0.89*	0.83*	0.71	-0.69	0.05	-0.20
IS5 Local	0.80†	0.75†	0.71	-0.67	0.18	-0.50
IS6 Family	0.15	0.30	0.53	-0.40	0.85*	0.02
IS7 Training	0.57	0.90*	0.82*	-0.38	0.40	0.06
IS8 Monitor	0.77†	0.73†	0.86*	-0.77	0.54	-0.46

† $p < .09$. * $p < .05$. ** $p < .01$.

State Report Card Ratings and Free or Reduced Price Lunch

Information on the state Report Card ratings for 2004-2005 and the I-SSET were available for 15 schools. The Report Card is a rating for the school as a whole on a scale of 1 (poor) to 5 (excellent) by the State Department of Education that is based on academic (e.g., achievement test scores in reading and math) and behavioral performance (e.g., attendance and drop out). Often used as an indicator of the socio-economic status of families of students in the school, the Free and Reduced Price Lunch measure is the percentage of enrolled students who

are eligible for free or reduced price lunches. These measures, and I-SSET scores for 2004-2005, records were available for 14 schools. Pearson Correlation Coefficients were calculated for these measures and the I-SSET scale scores and are shown in Table 8. Given the small *n,* probabilities less than 0.10 are indicated as possibly indicating associations that may of interest in future research with larger sample sizes. Having a high score on the Intensive scale appears to be associate with the school as a whole having a high score on the State Report Card. This might suggest a motivated, skilled, and hard-working staff. Apparently, having a high percentage of students from families with low incomes, as suggested by the Free and Reduced Lunch measure, does not necessarily prevent schools from having a high score on the Intensive and Foundations scales. However, it was negatively related to the Targeted scale although that association was not statistically significantly ($p < 0.10$).

Table 8

Correlations with State Report Card Ratings and Free and Reduced Lunch Measure

	State Report Card	Free and Reduced Lunch
State Report Card	1.00	
Free and Reduced Lunch	-0.05	1.00
Foundations	0.32	0.50†
Targeted	0.23	-0.09
Intensive	0.46†	0.49†

† $p < .09$.

ODR Rates for Fighting and Aggression, and Harassment

Office discipline referrals (ODR) were available from 10 schools that were using the School Wide Information System (SWIS, see http://swis.org) in 2004-2005 and also participating in the I-SSET research. In order to control for differences in school enrollment size, the frequency of ODR that year for the school was divided by the total number of students enrolled to obtain a rate per student. Often this rate is also divided by the number of days of school and then multiplied by 100 to obtain a rate per day per 100 students. However, all of these schools were had about the same number of days of school, about 175, so the rate reported here is simply the rate per student for the year. Although these rates appear small, the issue is the association of high (or low) rates with high (or low) I-SSET scores. The average rate per student per year of ODRs for fighting and aggression (one category that includes both types of problem behaviors) was 0.17 (*SD* = 0.12) and for harassment, it was 0.05 (*SD* = 0.06). Table 9 shows the correlations for ODRs for these problem behavior and the I-SSET scales. The numbers suggest that problems with harassment may be associated with efforts to improve the Targeted Intervention system and problems with fighting and aggression may be associated with efforts to improve the Intensive Individual Student system. Correlations do not show causality, but they do show associations. We have seen before that schools experiencing high rates of ODRs may also be the schools where staff and administration are highly motivated to make every effort to get more positive methods of behavior management in place and sustain these efforts over time. Future research should study associations between changes in ODR rates and changes in fidelity of implementation of school wide PBS as a 3T approach over time. Although the current study did not have many schools the provided sufficient data to do type of analysis in any depth, some pilot data are available from the 2003-2004 and the 2004-2005 academic years that suggest that

improvements in secondary or tertiary level support may be associated with reductions in problem behaviors of fighting and harassment. Figure 2 shows the percent changes for two elementary schools in ODR rates for fighting and aggression, and harassment, and for scores on the three I-SSET scales. It suggests that the improvement in the Intensive Individualized Intervention in School A may have been an important factor in the reduction in problem behaviors. Figure 3 shows changes over time for two high schools in discipline referrals for harassment and "In Place" scores for Individual Student System on the PBS Staff Self-Assessment Survey. One high school reduced problem behaviors and improved support from one year to the next while the other high school did just the opposite.

< Insert Figures 2 and 3 about here. >

Table 9

Correlations with Discipline Referrals for Fighting and Aggression, Harassment, and Defiance

	Fighting and Aggression	Harassment	Defiance
Fighting and Aggression	1.00		
Harassment	0.57†	1.00	
Defiance	0.19	0.03	1.00
Foundations	0.59†	-0.08	-0.14
Targeted	-0.002	-0.60†	-0.17
Intensive	0.65*	0.02	-0.07

† $p < .09$. * $p < .05$.

Highest Grade Level, Size of Enrollment, Student-Teacher Ratio, and AYP

For 16 schools in the 2004-2005 academic year, information was available about their scores on the I-SSET scales, their highest grade level, size of enrollment, student-teacher ratio,

and AYP. Correlations agree with the expected relationships among large schools, older students, a higher ratio of students to teachers, and not meeting AYP goals (Table 10). The AYP measure was scored as 1 for “not met” and 2 for “met.” The highest grade levels were, for elementary schools, 5; for middle schools, 8; and for high schools, 12. Also expected was the similar pattern of associations for scores on the Foundations and Intensive scale, given the high correlation already discussed between those two scales. However, note that the negative correlation between scores on the Intensive scale and student-teacher ratio is higher and more significant, statistically ($p < .05$) for the Intensive scale than for the Foundations scale, which is logical given that providing intensive individualized interventions takes time. Time well spent it perhaps, given the relatively high and statistically significant ($p < .01$) positive correlation between the Intensive scale and success in meeting AYP goals which are dependent on showing improvement among sub-populations, including students with disabilities and minority groups.

Table 10

Correlations with highest grade level, size of enrollment, student-teacher ratio, and AYP

	Highest Grade Level	Size Of Enrollment	Student-Teacher Ratio	AYP
Highest Grade Level	1.00			
Size Of Enrollment	0.93***	1.00		
Student-Teacher Ratio	0.67**	0.69**	1.00	
AYP	-0.86***	-0.75***	-0.54*	1.00
Foundations	-0.68**	-0.80***	-0.39	0.54*
Targeted	-0.21	-0.26	0.17	0.12
Intensive	-0.78***	-0.77***	-0.53*	0.66**

*$p < .05$. **$p < .01$. ***$p < .001$.

What Is the Empirical Evidence Justifying Actual Uses, Usefulness, and Social Validity of the I-SSET Measures in Schools?

Empirical Data on Actual Uses

Schools are justified in using instruments like the I-SSET to guide the development of their capacity to provide function-based, positive support, particularly to students who have, or are at risk for developing, disabilities requiring Special Education because of legal obligations (von Ravensberg & Tobin, 2006). When schools have data over time from repeated measures of

specific elements of their Individual Student System, action plans can be based on identified local needs which in turn can lead to improvements (Tobin, in review, b; Tobin et al, in press).

Users' Perceptions of Usefulness and Social Validity

Perceptions of usefulness and social validity were not formally collected from school staff regarding the I-SSET. However, in this study, researchers rather than school staff were the actual users of the I-SSET. From a research perspective, the I-SSET is useful for assessing fidelity of implementation of secondary and tertiary level interventions (Tobin et al., in press). Considering the number of schools across the country that regularly use the SET, the PBS Staff Self-Assessment Survey (Tobin, in review-a, b), and the TIC (Tobin, 2006), it seem likely that when a final version of the I-SSET is ready to be disseminated, schools that are serious about providing high quality support for students with or at risk for emotional or behavioral disorders, and/or exclusion from school, will find the level of detailed feedback they will be able to obtain about their efforts from the I-SSET to be extremely valuable.

Sensitivity to Program Interventions

The I-SSET was sensitive to program interventions related to the Behavior Tracking Sample Study (Tobin, Rossetto Dickey, Horner, & Sugai, in press). In addition, the current study revealed sensitivity to practices that are being used and practices that either are in need of improvement or that schools have decided are not practical for them to fully implement at this time. The schools involved, for the most part, had received some training in school-wide Positive Behavior Support and many had been sustain this intervention for years following initial training. Although school-wide PBS ideally includes the specific practices listed on the I-SSET for secondary and tertiary prevention interventions (see http://pbis.org), the primary prevention level usually is implemented first and some schools do not implement the full three-tiered model.

Results from the I-SSET provide a basis for both the schools and staff development experts to make decisions about which practices need attention. In this section, for each of the I-SSET's three scales, practices with the highest average scores and practices with the lowest average scores are reported. For all items, the highest possible score, indicating the best possible implementation of the practice, was 2.

Foundation Scale: Practices with Highest Average Scores (> 1.90)

- A1. Does the administrator report that there is a commitment to educate students with more extensive problem behavior?
- A3. Is a team identified to receive requests for behavioral assistance, develop behavior support, and monitor impact of support?
- B1. Does the behavior support team meet regularly?

Foundation Scale: Practices with Lowest Average Scores (< 1.16):

- A4. Are procedures for individual student support systems monitored by school-wide team?
- D2. Does the administrator report that the status of targeted and intensive support is reported to all staff at least annually?
- B2. Is there documentation that behavior support team meetings are conducted in a predictable and standardized manner?

Targeted Scale: Practices with Highest Average Scores (All tied at 1.54):

- E3. Does the behavior support team leader report that the most commonly used targeted intervention provides a) increased structure & prompts, b) instruction on skills, c) increased regular feedback, and d) is continuously available.

- F1. Does the behavior support team leader report that there is an option to modify plans based on assessment information?
- F2. Does the behavior support team leader report that at least half of the targeted interventions for participating students are implemented within 72 hours of completed assessment?
- F3. Do targeted interventions include a self-management component when appropriate?
- F4. Does the behavior support team leader report that there is a home-school connection component in the support plan?

Targeted Scale: Practices with Lowest Average Scores (< 0.93):

- G2. Does the targeted intervention include a summary on student outcome data on a monthly basis?
- F8. Are data available to support summary statement(s) (any evidence of interview, direct observation, archival review)?
- F5. Does the behavior support team leader report that there is instruction provided to students on features of the plan/necessary skills?
- F7. Does the behavior support team leader report that targeted interventions require no more than 10 min. per day from any instructional/supervisory staff (other than coordinators)?

Intensive Scale: Practices with Highest Average Scores (> 1.65):

- H4.Does the behavior support team include individuals with knowledge about a) the student, b) the context, c) behavioral theory, and d) related services (OT, PT, speech,

medical, if needed)

- H6. Do at least 67% of behavior support team members asked agree with the behavior support team leader on the process for involving family members in the identification and assessment of their child's needs?

Intensive Scale: Practices with Lowest Average Scores (< 1.10):

- H1. Of at least one and up to 5 sampled functional behavior assessments (written within the past academic school year), were 80% of critical features present?
- H2. Of at least one and up to 5 sampled behavior intervention plans (written within the past academic school year), were 80% of critical features present?
- H3. Is there documented evidence that the individual student behavior support plan is being implemented based on the data?

What Are the Ethical and Logical Consequences of the Implied Values When I-SSET Measures Are Interpreted in Schools?

Results of the I-SSET may be interpreted as an indication of attitudes of school administrators and teachers toward students with or at risk for emotional or behavioral disorders and concern for their education. These interpretations have ethical implications. As O'Neil et al. (1997) clearly stated, functional behavioral assessment and function-based support are based on valuing improving the quality of life for individual's with disabilities, and individual's whose behaviors may be challenging to themselves and to others. Most educators value the rights of individuals with disabilities to a free, appropriate, public education. Another ethical implication of the I-SSET is the value placed on nonaversive interventions that can be effective without the use of punishment (Horner et al., 1990). Success in improving the Individual Student Systems of Support, as measured by the I-SSET, suggests that the school staff members whose efforts made

this possible are ethical in their treatment of students who needed extra support and positive interventions to avoid the dangers and disadvantages associated with out-of-school suspensions and expulsions (American Academy of Pediatrics Committee on School Health, 2003)

The I-SSET includes items that can be interpreted as holding up as a value efforts by school staff to involve students' parents and family members when implementing secondary and tertiary prevention interventions. For the PBS Survey's Individual Student System Scale, data from more than 1,000 schools indicated that school staff members tend to perceive family involvement as having a high priority for improvement (Tobin, in review, a). The development of the I-SSET took place with an awareness of the teaching that occurs when schools are shown results of research data where the school efforts are compared to a criterion or to standards. I-SSET results for a school on the items related to parent involvement will be interpreted as having ethical implications if parent involvement is valued in terms of how successful the school is in improving the level of parent involvement over time. Schools interested in increasing parent involvement with FBAs and related interventions can find help online. Internet access is becoming more common. Parent-friendly materials related to function-based interventions at home and in school are available online (e.g., Jordan, n.d.; Tobin, 2005).

DISCUSSION

As schools strive to enhance methods of supporting students with challenging behaviors, researchers strive to develop accurate and useful tools for measuring progress in developing and implementing support systems. Work is in progress to refine the I-SSET on the basis of input from experts on behavior analysis who have been asked to respond to a survey to help determine content validity. Efforts also are needed to assess interobserver reliability, social validity, user's perceptions of usefulness, cost to benefit analyses, and assessments of actual impact of use.

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APPENDIX: PBS Survey Individual Student System Items[3]

1. Assessments are conducted regularly to identify students with chronic problem behaviors.

2. A simple process exists for teachers to request assistance.

3. A behavior support team responds promptly (within 2 working days) to students who present chronic problem behaviors.

4. Behavioral support team includes an individual skilled at conducting functional behavioral assessment.

5. Local resources are used to conduct functional assessment-based behavior support planning (~10 hrs/week/student).

6. Significant *family* and/or community members are involved when appropriate and possible.

7. School includes formal opportunities for families to receive training on behavioral support/positive parenting strategies.

8. Behavior is monitored and feedback provided regularly to the behavior support team and relevant staff.

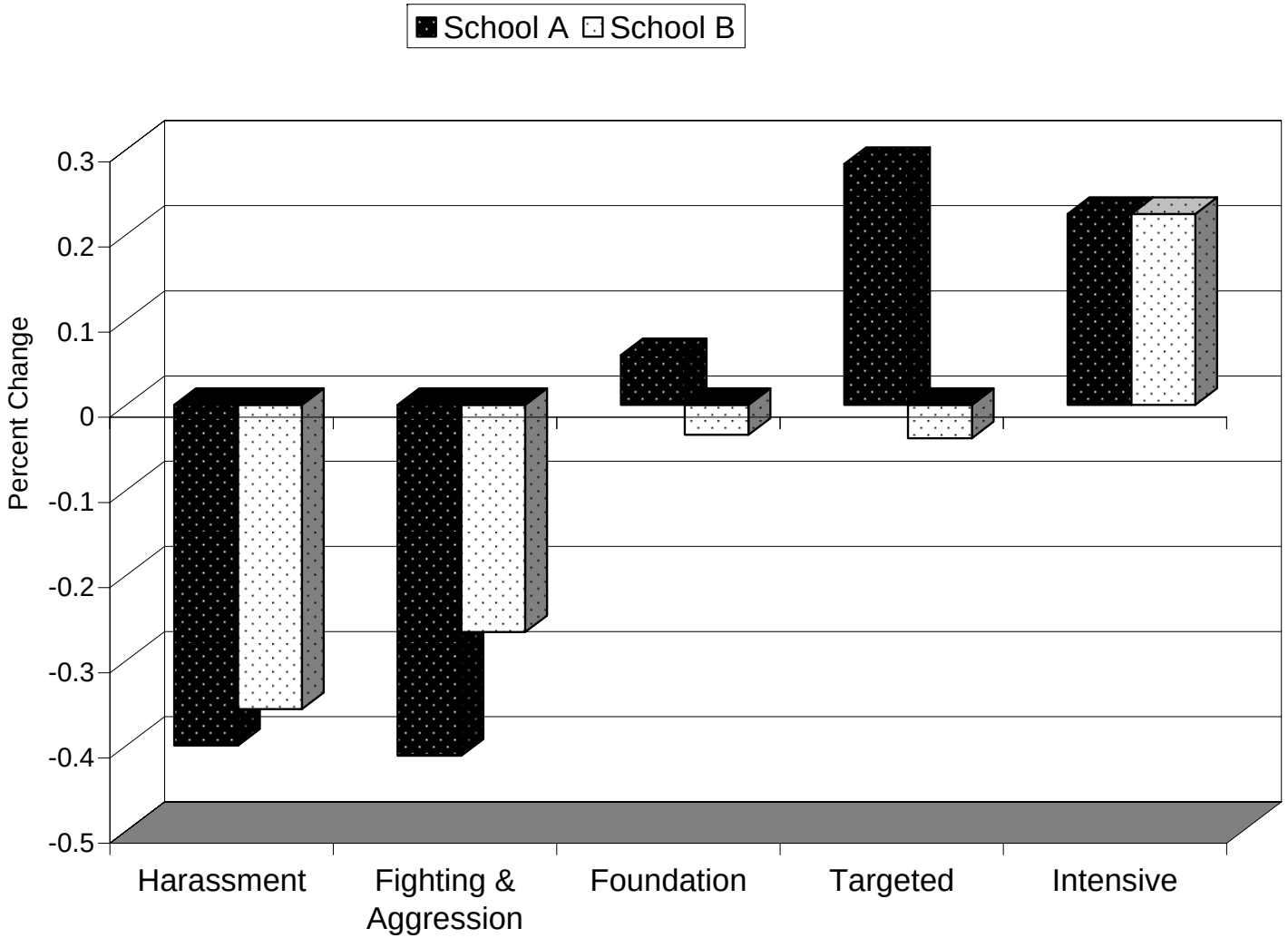
[3] Lewis & Sugai, 1999. Retrieved Dec. 12, 2006 from http://www.pbssurveys.org/pages/SelfAssessmentSurvey.aspx and http://www.uoregon.edu/~ivdb/doc/resources_links/comb_ass_survey.pdf

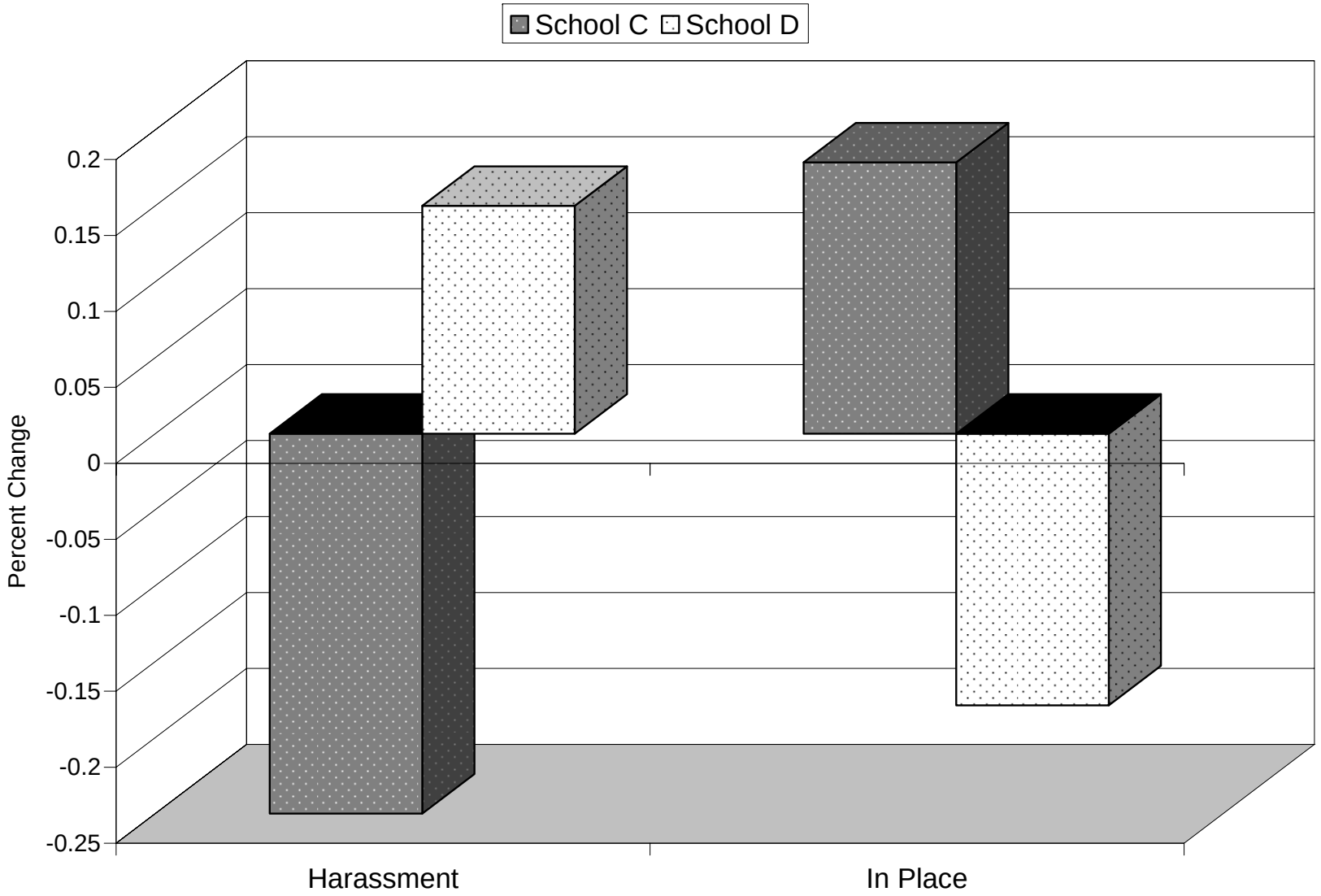
Figure Captions

Figure 1. Ecological systems perspective for functional interventions in versatile environments.

*Figure 2.*Elementary schools' percent change over time in ODRs for fighting and aggression, and harassment, and in the scales for Foundations, Targeted Interventions, and Intensive Individualized Intervention systems.

Figure 3. High schools' Percent change over time in ODRs for Harassment and in "In Place" Score for Individual Student System on the Staff Self-Assessment Survey.


School A
School B
Percent Change
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
Harassment
Fighting & Aggression
Foundation
Targeted
Intensive


School C
School D
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
Percent Change
Harassment
In Place