30 Years of Getting Teachers to Be More Effective

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This is a biography of sorts. It describes what our organization, The Institute for Effective Education (TIEE), has done for more than 30 years to improve the effectiveness of its teaching staff. Like all biographies, what follows is "pretty much" what we have done. Although TIEE is a data-based organization (it was awarded the Ernie Wing Award for Excellence in Evidence-Based Education by the Wing Institute), no data concerning teacher effectiveness will be presented here. We don't even have the makings of an A-B design (pre-post intervention design). Our approach has been to adopt methods supported by the research literature rather than conduct the necessary outcome research on our own.

We have never thought of ourselves as original—unique perhaps, but not original. What we do we owe largely to several incredible people who have influenced us, some of whom we mention at the outset to identify our biases concerning the education of children, adolescents, and young adults across the talent spectrum. Our pantheon includes B. F. Skinner, for the understanding that teaching is behaving, that students acquire new behaviors, and that positive consequences are critical; Zig Engelmann, for sophisticated analysis of subject matter, for assuming that everything must be taught, for the value of examples and non-examples, and for creating instructional programs like Reading Mastery, which are essentially 6-year-long independent variables; and Og Lindsley, for the Standard Celeration Chart (a semi-logarithmic graphing approach), for charting as a guide to instruction, and for the importance of fluency. Also included among those we greatly admire are a number of their followers and others who have promoted so-called direct teaching of academic, self-management, school-relevant, and social behavior as well as data-based instructional decision making. Finally, we are truly grateful to have been directly influenced on many occasions by the queen of teacher trainers, Dr. Anita Archer, who cannot go unmentioned as a member of our personal pantheon.

So, although we do not claim originality, we recognize that our schools are among a comparative few in the world that bring together the overwhelmingly evidence-based methods known today as ABA (applied behavior analysis), Direct Instruction (developed by Engelmann), including direct, systematic instruction), and data-based instructional decision making.

DESCRIPTION OF TIEE

TIEE is a California non-profit corporation that operates four schools in San Diego. Together, these schools educate about 400 students between the ages of 4 and 22 whose talents are extremely diverse.

SCHOOLS DESCRIPTIONS

TIEE's four schools are Children's Workshop (CW), COOK Education Center (COOK), Urban Skills Center (USC), and Mt. Helix Academy.

CHILDREN'S WORKSHOP. Directed by Hillary Whiteside, CW enrolls up to 50 students, ages 3 to 12, with severe communication, learning, social, and behavior problems associated with autism and other developmental disorders. These students require precise, specific instruction in small groups with many one-on-one opportunities to learn new skills.

COOK EDUCATION CENTER. Directed by Jen Swope, COOK enrolls up to 150 elementary and secondary students whose disabilities span nearly the full spectrum of special education eligibility. Small-group instruction is available for many COOK students, including some who are diploma bound. Other students require more intensive instruction to make progress.

URBAN SKILLS CENTER. Located next to COOK and also directed by Jen Swope, USC educates up to 50 young adults, ages 18 to 22, with mild to moderate learning disabilities. Some of the students are studying to complete a high school education and obtain a diploma. All of the students are acquiring important social, vocational, and independent living skills designed to optimize their post-school employment and living options. Small-group instruction is the norm for this school.

MT. HELIX ACADEMY. Directed by Mike Collins, Mt. Helix Academy serves approximately 200 typically developing students, pre-K through 9th grade. All kindergartners learn to read, and it is common for graduating 8th graders to take advanced placement classes in high school. Mt. Helix Academy also houses AIM HIGH, which provides pull-out and full-day academic support services for 30 students who require more intensive instruction to acquire basic academic and social skills. Reviewers, completing their tri-annual recertification, from the California State Department of Education have reported that Mt. Helix Academy is a model of how best to implement the integration of special needs students with typically developing students.

All four of the schools are certified by the California Department of Education as non-public, non-sectarian schools, which allows us to contract with local school districts to provide special education and related services for students not served in their public schools. Currently, TIEE contracts with 25 districts in San Diego, Riverside, and Imperial Counties to implement the Individual Education Plans of roughly 200 students. In addition, Mt. Helix Academy is accredited by the Western Association of Schools and

Colleges (WASC). Its review team gave rave reviews of program quality, and the Association awarded Mt. Helix Academy the highest level of accreditation.

TIEE Mission Statement

TIEE's schools operate according to the following statement of the organization's mission:

> The Institute for Effective Education (TIEE) is dedicated to schooling that is unparalleled in scope of curriculum, effectiveness of instruction, and pervasiveness of positive ambience. To achieve this goal, TIEE is committed to using the principles, methods, and facts established by behavioral science research of the highest standard in order to educate children, adolescents, and young adults whose talents span the full spectrum of ability.

Personnel Selection

TIEE teaching staff

TIEE currently employs 130 teaching staff members. Of these, 15 hold California general education credentials and 36 hold California special education credentials; 10 are specialists, including licensed speech and language therapists, registered occupational therapists, a visual arts instructor, and a music teacher; and 66 are employed as classroom assistants with specific teaching responsibilities under the supervision of a credentialed teacher.

One way in which TIEE's schools are different from other schools and school districts is that 46 of the 49 credentialed teachers (94%) obtained their credentials while employed at TIEE as classroom assistants. Many of them made the decision to acquire teaching credentials and devote their lives to teaching during their time as classroom assistants.

Two-part selection system

The fact that such a high percentage of TIEE's credentialed teachers obtained their credentials while working as classroom assistants tells us that TIEE has a two-part selection system. The first part has to do primarily with the hiring of classroom assistants. Only a rare individual is newly hired as a credentialed teacher. The second part has to do with retaining and promoting those individuals who eventually acquire a teaching credential and a few others who continue to serve as paraprofessionals.

Candidates for employment as classroom assistants are initially screened on the basis of their applications and are invited for a group interview, which we conduct several times

each school year. Group interviews, conducted jointly by our human resources manager and the director of the school that needs staff members, allow us to interview more candidates per unit time and to see how the applicants respond in a group context, which we believe predicts how well the candidates will function as team members. We look for an overall positive affect, enthusiasm, eye contact, evidence of listening, and responses to specific questions about situations a candidate is likely to encounter in working for us. We are especially biased in favor of hiring applicants who are referred by current employees and those who are considering becoming teachers.

By "growing up" in our system, our paraprofessionals provide us with valuable information on how much they really want to teach and are capable of teaching. The path to becoming a credentialed teacher is not easy, in part because the paraprofessionals must attend university classes after working a full day and, in those classes, they learn little that is relevant to their day job. Unfortunately, all too much of what they are expected to learn is contrary to being an effective teacher. All the same, we promote paraprofessionals who show an eagerness and quickness to learn new tasks, demonstrate an interest in how best to educate students we serve, are team players who embrace our culture, and have enrolled in a teacher training program. It is common for TIEE to have two or three credentialed teachers working as paraprofessionals while waiting for a teaching position to become available.

PROMOTING LONGEVITY

We do not often consider that our school environment promotes longevity. Rather, what we have tried to do is create a school environment that is inviting and effective. The fact that this attempt has also resulted in the longevity of key staff members is clearly a very big plus for TIEE because it ensures that the culture continues and provides many highly skilled professionals to mentor newer staff members. Forty-six percent of our teaching staff have worked for TIEE for 5 or more years, and 24% have worked for TIEE for more than 10 years. Among credentialed teachers, longevity is even more impressive. Their mean term of employment is 10.6 years.

So, what is it about our schools that leads so many staffers to teach in them year after year, and for less compensation than they would obtain in public schools?

One possibility is that our teaching staff have a common set of beliefs and a common set of goals. Primary among the beliefs is that we are responsible for each student's learning. If a student is not learning at an adequate pace, we must change what we are doing. Blaming the student, the student's parents, television, computer games, or some other factor is not acceptable. Primary among our goals is that we spend as much time teaching our students as the school day allows.

A second possibility is that our staff members strive to be positive, consistent with our guiding principle, "Catch 'em being good." Teachers and assistants are encouraged to praise the positive things that students do, including both efforts and achievements, and they are also encouraged to note the positive actions of other staff members. The "good" behavior of a staff member might be acknowledged at a morning team meeting or at one of our weekly all-staff WOW meetings, during which the positive staff and student behaviors observed during the week can be reported. Staff members may also award one another a red ticket toward our weekly lottery drawing, called "Staffles," with prizes that include $10 gift cards to Starbucks or Target, extended lunches, tanks of gas, and so on. Occasionally, there is an ever-popular surprise envelope, one of Bill Jenson's Mystery Motivators (Jenson, Rhode, & Reavis, 1994). In short, we try to make as public as possible the good things staff members do to enable the school to operate positively and fluidly. WOWs and Staffles also permit the acknowledgment by fellow staffers to be public. In addition to these contingent consequences, we provide many that are not contingent, including maintaining our facilities, conducting repairs and improvements as soon and as much as possible, decorating the facilities with colorful artwork, providing Starbucks coffee, and so on. It is important to us that one California state reviewer commented that TIEE schools are the most positive places he has ever seen—not just the most positive schools, but the most positive places.

A third possibility is that TIEE schools are problem-solving (as opposed to complaining) environments. We implement a team-oriented approach to solving both academic and social problems in which no one is left to solve problems on his or her own. In addition, we have created an hierarchical system of increasing expertise, in which teachers can and do mentor assistants, program coordinators can and do mentor teachers and assistants, school directors can and do mentor all others, and the school directors can and do seek assistance from one another and the organization's executive directors. Such assistance is provided as and when needed, in part because we see TIEE as a training organization. In this regard, we also promote professionalism, including pride in being a professional educator, striving to become one, and making the effort necessary to improve. Our staff members are regular attendees of professional conferences, often making presentations. We provide partial tuition reimbursement for university coursework leading to a degree or credential, and we encourage our staff members to teach at local universities when possible.

INEVITABLE TURNOVER AND THE NEED FOR SKILL TRAINING

We are not so naive as to believe that selection is entirely a TIEE matter. Clearly, TIEE is selected by its applicants. Not all of them are interested in being employed by us once

they are interviewed and learn a bit about the prospective job. And not all employees become long-term staffers.

Turnover is a significant factor in our business. It is a minor budgetary plus, because on average new hires earn less than the former employees they replace. However, turnover is a serious training minus, because new hires require a great deal of training in order to be successful in their teaching duties. Over the past 3 years, 74 classroom assistants left TIEE. That's an average of 25 per year, or nearly 40% of all classroom assistants. Of those leaving, 55% worked for less than 1 year. By far, the greatest number of turnovers have occurred at our Children's Workshop, and no wonder as Children's Workshop enrolls the most challenging students: those most likely to spit or bite, most likely to require toilet training, and so on.

EFFECTIVE TEACHER PRACTICES AND WHAT WE DO TO PROMOTE THEM

ADHERING TO A BASIC PHILOSOPHY OF TEACHING

Whether and how an organization goes about training its staff to improve its teaching depends, among other factors, on the organization's explicit or implied view of teaching. Our view is that teaching is behaving, and a teacher's behaviors occur according to the basic principles of behavior (reinforcement, extinction, shaping, stimulus control; e.g., Cooper, Heron, & Heward, 2007; Vargas, 2009). Having adopted this view, we asked ourselves, what are the sources of reinforcement for teacher behaviors? A paycheck, student achievement, "thank you" notes from parents, recognition by the principal, or recognition by peers might very well be effective reinforcing consequences. However, because they are so delayed with respect to specific teacher behaviors, it is not very likely they play much of a role in strengthening those behaviors. Rather, we believe that what the students do right after the teacher gives them an instruction or poses a question has a much more powerful reinforcing effect.

The problem, as we see it, is that students generally are not taught to differentially reinforce effective (i.e., evidenced-based) teacher behaviors.1 Our belief, then, is that teachers are at risk of deviating from the methods known to be effective because of the

[1] Effective classroom management is often devoted simply to the reduction of problem behavior, although models like Horner and Sugai's PBIS (PBIS.org) teach classroom and

consequences provided by the behaviors of their students. This problem is especially apparent when the class includes one or more students whose problem behaviors can't be ignored and are reinforced by gaining teacher attention or by avoiding learning tasks.

We've implemented two strategies in our attempt to lead teachers to maintain program (or method) fidelity even when teaching students who are the most challenging. The first has to do with the evidence that verbally governed behavior (Catania, 1998) can be resistant to prevailing contingencies of reinforcement (e.g., Matthews, Shimhoff, & Catania, 1987; Shimhoff & Catania, 1998). The second involves instituting a system of frequent observation of and feedback on the teacher's implementation of evidence-based practices.

"Verbally governed" means more than stating rules, even rules that describe effective teaching. In our view, inoculating the teacher against the effect of reinforcers provided by the students, can be accomplished only if the teacher (a) can verbalize the rule; (b) can determine whether a specific behavior is or is not consistent with the rule (i.e., observing); and (c) can actually perform behavior that is consistent with the rule (i.e., performing). As a result, our training is conducted in a way that attempts to strengthen all three of these skill sets: the verbal, the observer, and the performer. For a highly skilled teacher, all three skill sets seem to interlock in a fluid system of verbally governed teaching.

However, it seems that no teacher behavior is entirely free of prevailing contingencies of reinforcement provided by the students (and, to some extent, by colleagues and supervisors), so we believe that to maintain effective teaching, even for expert teachers, monitoring and feedback by someone whose verbal, observer, and performer skill sets are sophisticated is essential. The luxury of video recording permits such monitoring and feedback to be performed by the teachers themselves. However, the most effective system of monitoring and feedback is likely to require at least occasional participation by an independent set of eyes.

ESTABLISHING A CULTURE OF TRAINING

The people we hire as novice classroom assistants, many of whom have college degrees, almost never have effective teaching repertoires. This means that we must ask our new hires to acquire many new behaviors, some of which must replace behaviors that are more likely (e.g., praise the one desirable behavior instead of criticizing the many undesirable behaviors, ignore the spitting instead of striking the spitter or spitting back). To accomplish this challenging task, we have tried to establish a culture of training guided by a few principles, including "we use what works," "we accept responsibility for student learning," and "we catch 'em being good."

Several things we do seem to us to be important in realizing this culture. We have a strong sense of what skills a new assistant must acquire. We provide comparatively intensive training. We model the desirable behaviors, provide practice for those behaviors, and give corrective or positive feedback on those behaviors. Additionally, if a young assistant or a new teacher is struggling in a particular teaching interaction, we provide coaching. The coach may describe what the assistant or teacher is to do or occasionally the coach may actually take over the teaching to demonstrate the desired method.

During supervision meetings, we comment positively on what has been performed well and we ask trainees to improve no more than one or two skills at a time. We hold data shares, WOW meetings, team meetings, and supervisory meetings in a way that permits all teaching staff, including trainees, to publicly perform behaviors that are important to the culture of training we are trying to maintain. We provide staff evaluations based in large part on the performance of effective teaching methods.

TRAINING IN EVIDENCE-BASED TEACHING METHODS

Training in research-validated methods is ongoing in our organization, and it occurs in three widely overlapping categories: (a) foundational training, (b) advanced training, and (c) skill sharpening.

FOUNDATIONAL TRAINING. Our newly hired classroom assistants must actively teach as soon as possible, so we are motivated to provide training of foundational skills in as short a time as possible. At the end of their first 30 days, new assistants are evaluated on the performance of approximately 100 skills, 40 or so having to do with their teaching. The following is representative of the type of evaluation provided:

1. Follows task sheet/script for academic curriculum.
2. Occasions group responses as appropriate.
3. Employs model-lead-test (i.e., “I do it, we do it, you do it”) prompting procedures.

The new assistant is assigned to an expert teacher in one of our schools where additional personnel are needed. There, the new assistant begins a period of observing her or his supervising teacher. During each of these observations, the assistant is expected to collect data on the occurrence of specific teacher and/or student behaviors. Because we place such great emphasis on praising student effort and achievement, it is common for the first observations to include event recording of teacher praise. Number of student responses, error corrections, and so on are also coded in subsequent observations. These observations become the focal point of discussion with the teacher.

The next assignment, which often overlaps with the observation requirement, is to practice delivering lessons. The lessons are either scripted, perhaps one of the Direct Instruction lessons, or follow from one of our task sheets, perhaps a lesson on requesting information. Generally, this assignment has several important results, including development of foundational teaching behaviors, strengthening of skills in conducting a lesson type highly relevant for the students the new assistant is scheduled to teach, and strengthening of the new assistant's inclination to be coached. Although new to most people, being coached is a skill that is essential to our way of teaching, so it is critical that the assistant display a willingness to receive coaching. Equally critical is that the supervising teacher conduct coaching in an encouraging rather than a critical manner.

At this point, and assuming that the new assistant has been successful in previous assignments, live teaching is scheduled. If at all possible, the first lessons taught by the new assistant are well practiced in simulation and are with students who have been taught quality session skills (i.e., a comparatively "easy" group). Also, if at all possible, the lesson is conducted in the presence of the supervising teacher, who provides coaching as necessary. Over successive days and weeks the assistant is expected to become increasingly independent of the supervising teacher for all aspects of lesson delivery, including data collection.

We fully expect that foundational teaching skills, including maximizing opportunities for students to respond; ensuring that students are correct on most first responses; providing positive consequences for student academic, procedural, and social responses; and charting data that are collected from the session will not be sustained unless support is provided. In general, all that we do to provide the "culture" of effective instruction serves as major support. The Direct Instruction programs are another source of support, as are our task sheets. Microsoft's Excel provides us with automatic charting of raw data entered into a ledger. Of course, the major support comes in the form of observation, feedback, and occasional coaching.

Because our experience tells us that problems with instruction, whether the failure of students to achieve at the desired rate or too many disruptive behaviors, very often occur because of the failure to implement foundational skills. Consequently, we developed a form that permits coding of teacher behavior during lessons, which we call the Instruction Observation Form (IOF; see Appendix A). The foundational teaching practices that are coded on the form include (a) occurrence and accuracy of student task-relevant responses (both individual and group); (b) error corrections; and (c) both positive and negative consequences for student responses, recorded separately for task-

relevant and social/procedural behaviors. Rates and percentages can be calculated from the events recorded. Additional practices (e.g., organization of materials) that do not readily lend themselves to event recording can be rated as high, medium, or low.[2]

The IOF provides some terrific advantages. First, it codes what it is that we want our teaching staff to do. It is a comparatively easy tool to use; with very little instruction, new classroom assistants are able to reliably code their own teaching. Common problems—including too few responses per unit time, too few group responses, failure to correct errors, "nagging" of students about off-task behaviors, and so on—readily show up in the coding. The data, which are reliably collected within a 5- to 10-minute observation period, become the focus of supervision discussions. These sessions are best when the assistant has videotaped a lesson and has already filled out the IOF prior to the meeting, because a kind of self-management about effective teaching practices is being developed.

ADVANCED TRAINING. Clearly, more than foundational skills are needed for success in teaching, and this is especially true for success in teaching students with challenging special needs. For example, training is essential to analyze the contingencies that support problem behavior, to prevent occasions of problem behavior, and to manage instances that become severe. Training is essential for implementing and fading prompts of all kinds, and for knowing when to use physical prompts and how to fade them, when not to use physical prompts, and when it is important to just wait (prompts are supplemental stimuli such as verbal directions that increase the probability a behavior occurring; fading is used to eliminate the supplemental stimuli so the student is responding only to the relevant stimuli). Training is needed for teachers to know how to modulate their reactions to student behavior depending on whether it is desirable or undesirable, whether it needs a big payoff, or whether it is sufficiently strong and little or no payoff is necessary. Training is required in how to teach procedures depending on whether students have reasonably strong verbal repertoires or not.

Appendix B is an example of a task sheet used by a staff member who is assigned to teach "labeling the actions of others" to one of our students. Notice the terminology in the procedure, as follows:

> Target actions should have already been mastered in structured settings (labeling actions in photos). Initially, assess generalization in the natural

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[2] Our IOF derived from our long-standing relationship with the DI community, from which we acquired many of the practices we currently employ.

environment by providing the SD without prompting. Actions not labeled independently should be trained using the quick transfer procedure using an echoic prompt. In between each trial, provide several simple directions which are not in the same curriculum area of labels (e.g., imitation).

"Assess generalization," "SD without prompting," "not labeled independently," "quick transfer procedure," "echoic prompt," and so on are all technical terms that refer to teaching procedures. Knowing the procedures and actually performing them appropriately are advanced skills that represent the culmination of a great deal of training over a substantial period of time.

The list of advanced skills is seemingly endless, and it grows depending on the outcome of systematic research on teaching methods. Some of the training of advanced skills is necessary for a great many staff members, so it will be given in a combination of large-group and small-group training sessions. Other methods are needed only by staff members who teach a particular student or two, so the training is tailored to the needs of these staff members. In any event, our workday is 8 hours and our school day is 5½ hours, so there is time each day to conduct professional training as needed.

SKILL SHARPENING. A particular student's program is often compromised by two factors: (a) several teachers work with the student each day, and (b) the fidelity of the program diminishes.

We have long felt that it is important for teachers and their assistants to teach different groups of students each school day. This practice is especially valuable when the students display significant problem behaviors, because the staff member can get a brief relief by teaching another group of students the next period. There is also an advantage for the students, because they have the opportunity to acquire and practice skills with several staff members, which promotes generalization. However, a problem occasionally arises when different staff members deliver tasks or consequences differently. This is not so problematic when the student is comparatively high functioning, but it can be a serious roadblock to achievement for a student who is low functioning. How such tasks are to be delivered is commonly sharpened during morning meetings by demonstration and practice.

Occasionally, a staff member needs more to be successful. For example, most-to-least physical prompting and fading those physical prompts is a skill that everyone working for us needs to be taught. Not everyone readily picks up the technique in our standard training, so one of our program coordinators, Sherry Lacson, designed a master's thesis study in which she used a video model to successfully teach most-to-least physical

prompting to two of three classroom assistants who had difficulty acquiring the skill. The third assistant improved but also needed specific coaching to acquire the skill.3

Another problem, which we believe is far more prevalent in education than anyone cares to imagine, is the gradual loss of program fidelity. Our observations of the implementation of behavior intervention plans based on functional analyses are that skill sharpening is needed about once every 3 to 7 days. Observation probes, whether live or on video, are critical to detecting deviations from the program. Typically, simple skill sharpening by demonstration and practice at a morning meeting is all that is necessary to re-establish program fidelity.

COACHING THE COACHES

One of us (Fitch) is also a member of the faculty of San Diego State University's Special Education Department, and teachs methods classes at the Imperial Valley campus. In addition, Fitch plays a role in a series of personnel grants, led by Professor Jose Luis Alvarado, that is responsible for training a significant number of special education teachers for service in Imperial Valley schools. The 16 eligible school districts participate in the program. Most of the participating teachers hold an alternative intern credential that permits them to teach in their own classrooms while they are completing the coursework necessary to obtain their preliminary teaching credentials.

Fitch's role is to encourage the teachers in the program to implement evidence-based instructional practices. However, because of time restrictions and the vast Imperial Valley area, which stretches nearly 4,600 square miles, there are a limited number of ways to improve the effectiveness of these intern teachers in their own classrooms.

The solution we developed amounts to growing a culture of improvement across schools and districts instead of within each school or district, and it appears to be working quite well. First of all, the interns must complete at least one or two methods courses that emphasize the foundational methods described earlier in this article. During these courses, the interns are given many opportunities to practice the foundational skills and they learn to use the Instruction Observation Form to record how well they are performing. Thus, they acquire at least rudimentary verbal, observer, and performer skills related to effective teaching methods.

In addition, the interns are required to a take a practicum course each semester. Here is where the personnel preparation grants have given us the opportunity to innovate and develop the culture of improvement. Over nearly 17 years of training teachers in Imperial Valley, a cadre of former students who have shown a high degree of success in

their own classrooms, have become devoted to the use of evidence-based methods, and have acquired the skills necessary to give feedback to their peers. These former students coach the intern teachers in the practicum course a minimum of four times each semester. Coaching is based on three 45-minute videotaped lessons and at least one live observation.

Meanwhile, Fitch has devoted her time to coaching the coaches rather than directly coaching the interns. She meets with the coaches each month for approximately 3 hours, during which time a multiplicity of problems are solved. Most often, the meeting includes observation of and feedback on videos of the intern teachers the coaches are coaching. These videos show that the interns are improving their use of effective instructional practices. They also report accurately on their teaching skills, and they know how to adjust their instruction when they see an instructional error. Finally, survey results from supervising administrators consistently rate program graduates as highly competent at implementing effective instructional practices.

DISCUSSION

This article provides a description of the principles and procedures we have adopted at TIEE and extended to California's Imperial Valley to improve the effectiveness of teachers. Clearly, our paper would have been greatly improved if we had data to show that our methods are effective. We believe they are and we receive many accolades to that effect, but these are not data. Instead of conducting the necessary systematic evaluations ourselves, we have relied on the developing research literature to inform us of the methods we should implement and the curricula we should teach. Along the way, we have tried our best to adhere to our principles, especially that we are responsible for the learning of our students and that it is in everyone's best interest to "catch 'em being good."

Currently, there are many efforts to improve education that we applaud, not the least of which is the work of the Wing Institute. Ongoing research by applied behavior analysts has been especially vigorous, and the texts and journals in this field provide a large and valuable resource for educators. One fascinating result is the relatively greater success for some students of programs that are computer generated (e.g., Headsprout, a computer assisted early reading program) or are video models comparable to programs presented live by a teacher. Research by Hillary Whiteside and Alicia Ritter of our staff has shown that young kids with autism who were never observed to provide assistance to another person became great helpers after merely one or two viewings of a video model of one person helping another. In another of our studies, Matt Wilbat of our staff

showed that young kids with autism can rather easily be taught through a video model to ask for information necessary to solve a current problem. Of course, not all the data are in, so we do not know the limits of these digitally displayed models and computer-generated programs. Still, they appear to hold promise for extending our concept of effective instructional methods.

As educators for more than a generation, we also have much to be concerned about, including what passes for university-level teacher training; teacher credentialing without criteria for performance of evidence-based methods; the national conversation about education and the promotion of high-stakes testing to evaluate teachers; the ability of individual teachers, schools, and districts to choose methods that are known not to be effective (e.g., matching student learning styles); the failure to require strong observer skills concerning effective practices by those charged with providing supervision of teachers (e.g., principals); and on and on. These topics have been treated far more trenchantly by Engelmann (1992, 2007), Kauffman (2010), and others than we could hope to achieve.

What has not received enough attention, we believe, is the analysis of variables governing teacher behaviors. Our view is that effective teaching depends on rule-governed behavior that combines verbal, observer, and performer repertoires. We also are of the view that sustaining such behavior in the presence of student contingencies that are at odds with effective teaching requires observation and feedback by a supervisor (coach) who is quick to detect teaching flaws, can demonstrate effective alternatives, and can describe them to the teacher who is in need of change in such a way that the teacher is likely to adopt the new behavior. The school (or district) that has developed a genuine “culture of improvement,” we submit, is more likely to achieve these ends than the school that has merely given lip service to improvement. However, what behaviors are prevalent in such a culture, how they are inculcated and sustained, and how they serve to lead to improvement remain to be explored.

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Appendix A

Instruction Observation Form and Instructions for Use

September 10, 2001 — **Instruction Observation Form** — A data form of The Institute for Effective Education

Instructor:	Observer:		Date:
Subject/Lesson:	Scheduled Time Begin:	Scheduled Time End:	Scheduled Time Total:
Counting Period:	Actual Time Begin:	Actual Time End:	Actual Time Total:

Student Academic Responses	
Group	Individual

Positive Consequences		Negative Consequences	
Praise	Other	Rules	Penalties
Academic Performance			
Social Performance			
Examples:			

I = response; + = error; √ = signal error; ⊕ = error corrected

		Comments
Student responses per minute: Academic responses / minute		
Percent Correct Responses: 100 x Corrects / Academic responses		

		Comments
Percent Positive Consequences: 100 x Positives / (Pos. + Neg.)		
Percent Group responses:		
Percent Individual responses:		

Are materials organized and ready to go?	Hi M Lo	
Is Transition time quick and smooth? (e.g. begin/end of class, between tasks)	Hi M Lo	
Are session skills evident?	Hi M Lo	
Is lesson delivered fluently?	Hi M Lo	
Are directions given clearly?	Hi M Lo	
Is signal clear and appropriate?	Hi M Lo	
Are procedures evident?	Hi M Lo	
Are students monitored? (e.g., responses, transitions, indep work)	Hi M Lo	
Is Instructor's voice used effectively?	Hi M Lo	
Is praise used to shape behavior?	Hi M Lo	
Are errors corrected appropriately?	Hi M Lo	
Are responses firmed?	Hi M Lo	
Are data collected?	Yes No	

Assignment for next time:

Instruction Observation Form

A. Information Box

B. Student Academic Response
   1. Categories: Group vs. Individual
   2. Coding
      - | Corrects
      - + Errors
      - ⊕ Corrected Errors

      *** *Corrected errors include an opportunity to practice the corrected response*

C. Consequence
   1. Positive
      - Praise
      - Other
   2. Negative
      - Rules
      - Penalties
   3. Categories
      - Academic
      - Social
   4. Examples

D. Scoring
   1. Student responses per minute
      - All response / minutes
      - Example: 74 responses over 8 minutes = 9.25 rpm
      - GOAL (depends on curriculum / generally 8-10)
   2. Percent Correct Response
      - (Correct / All responses) x 100
      - Example: 62 corrects / 74 total responses = 0.837 x100 = 83.7%
      - GOAL: instructional level = 70-89%
   3. Percent Positive Consequences
      - [Positive consequences / (Pos + Neg consequences)] x 100
      - Example: 28 / (28 pos + 12 neg) = 0.7 x 100 = 70%
      - GOAL = 80% or higher
   4. Percent Group/Individual Responses
      - Group = (Group responses / all responses) x 100
      - Individual = (Individual responses / all response) x 100
      - Example 56 group & 18 individual: 56 / 74 = 0.756 x 100 = 76%
      - GOAL: ~80% group responses
   5. Other Scores that can be Computed
      - Correct academic responses per minute (corrects/minutes)
      - Percent errors corrected (corrected errors/all errors x100)
      - Rate of positive consequences (positives/minutes)

E. Instructional Features

1. Material organized
    - Look for ease in obtaining materials, neat work surface, everything ready to go
2. Transition time
    - Look for minimal directions necessary, amount of time in transition, types of errors
3. Session skills
    - Look for students sitting appropriately, engaged in task, looking at teacher
    - Is teacher modulating up to re-acquire attention (problem)
4. Lesson fluency
    - Look for ease in following script or lesson plan, consistency, ease in catching and correcting errors, ease in looking between lesson/script and group
5. Clear directions
    - Do students appear to know what to do? Are directions clear to you?
6. Signals
    - Some type of signal for group responses
    - Group responses are generally on-signal
    - Appropriate signal for type of response called for
7. Procedures
    - Evidence of students independently engaging in routine behaviors
    - Is teacher giving a lot of directions/prompts for routine behaviors (problem)
8. Students monitored
    - Is teacher looking while students are responding
    - Are students doing independent work getting feedback as necessary
    - Are appropriate behaviors praised/problem behaviors corrected as appropriate?
9. Instructor's voice
    - Is teacher's voice audible to all students, does he/she use inflection as appropriate to emphasize key words, does teacher's voice show 'interest' in lesson.
    - Does teacher modulate voice (& affect) to encourage desirable behavior and discourage undesirable behavior
10. Praise to shape behavior
    - Does teacher attend to/praise behavior towards reaching a goal (e.g., praise going right to desk before prompting getting materials ready)
11. Appropriate error corrections
    - Errors corrected immediately & addressed to the group
    - Appropriate error corrections for type of error made
    - Error corrections given in a neutral manner
12. Responses firmed
    - Does teacher back up in lesson / go back to re-test previously err'd responses
13. Data collected
    - Were assigned rate drills completed?
    - Were other relevant class/individual student performance data collected per program requirements?
    - Were data recorded in the appropriate place?

Appendix B

Labeling Actions of Others Task Sheet

Labeling Actions of Others

OBJ #1: Student will label actions of others in pictures (e.g., 'What is the boy doing?" Eating) as measured on 9 out of 10 trials on 3 occasions for 10 actions in a mix.

TASK: SD: Teacher says "What is (subject) doing? while holding up a picture of the subject/action.
Target Response: Student responds by labeling the action using vocalizations.

Procedure: Initially work on one action in isolation and use the quick transfer procedure in order to teach a new action using an echoic prompt. In between each trial, provide several simple directions which are not in the same curriculum area of labels (e.g. imitation of several simple motor movements). Once firm on the first action work on the second action in isolation. Once criterion is met for the second action, mix the first two actions Continue isolation and mixing until 10 actions are firm in a mix.

Materials: Pictures or photos of subjects engaging in common actions.

Scoring Procedures: Using a standard trial data sheet, record a response as:
P = when using a quick transfer procedure and a prompt is added to the SD.
+ = independent correct response
- = incorrect response

Error Correction: If an error occurs, record as incorrect and then return to using the quick transfer procedure by priming the response using an echoic format (e.g., "Say eating" Fade the prime by interspersing firm tasks before moving to the next trial. If 2 consecutive or 3 separate errors occur move to prompted trials for the remainder of that session.

Graphing: Transfer the raw data to a sessions summary chart. Only trials where the target behavior was performed independently will be counted as correct. Total the # of corrects and place the data point on the graph. Draw a phase line if any changes or interventions were made for that session, if a new skill was introduced, or if the criterion was met.

Target Actions	Date Introduced/ Mastered	Date	Target Item	Date Introduced/ Mastered	Date
eating			running		
drinking			reading		
sitting			swimming		
standing			sliding		
clapping			dancing		

Date	Intervention

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