

## Can It Be Done Better for Less: A Model for Effective Applied Behavior Analysis Training in School Districts

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### Abstract

At a time when special education budgets are constrained and the demand for behavior analysis services continue to increase within school settings a clear implemental system to train the trainers is not only necessary but essential. This paper discusses one possible system for making behavior analysis services and behavior analysis training available to front line special education teachers while maintaining affordability for school systems.

Keywords: Staff training, school district in-services, applied behavior analysis, cost effectiveness

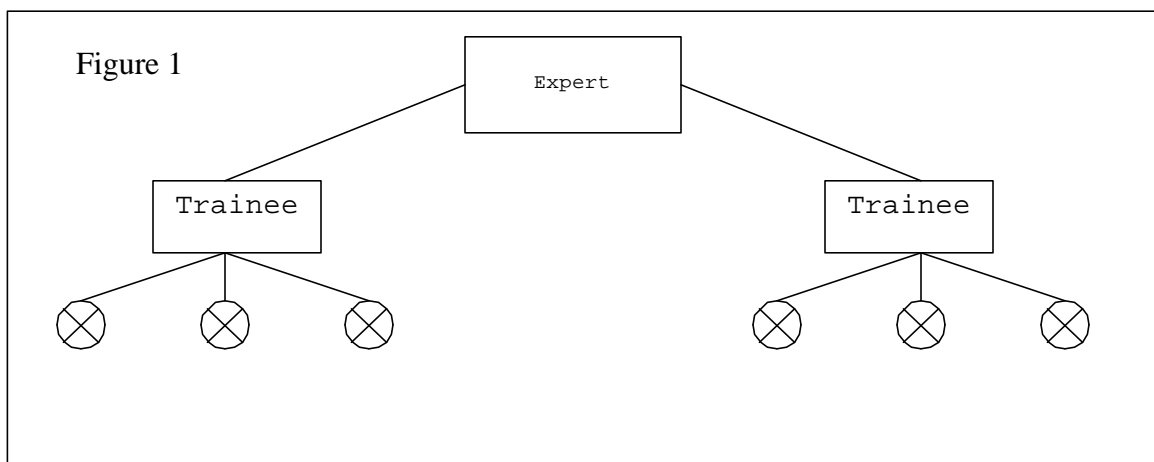
### Pyramid Training

In best utilizing the limited resources of school districts today to deliver the best educational benefit possible to children it becomes necessary to investigate different forms of training. One form that has been used often is the “train the trainers” modality or a pyramid training program. The essential method in a pyramid system is that exacting instruction is delivered to a relatively small number of initial people who then can train additional people in the future. As shown (figure 1) above this type of model uses the expert to train initial trainees who then using the same training model and standards in turn train additional trainees (train the trainer).

In 1977, Jones, Fremouw, and Carples trained three regular elementary teachers in the use of a behavioral analysis classroom management skill package. In turn, these teachers, using the same instructional package trained three more teachers in the same skill package. Direct behavioral measures of student disruptiveness and permanent product measures of student productivity were collected and compared on all the teachers’ classrooms. Data indicated that student disruptiveness decreased while productivity increased overall classroom academic output. This was especially true for those students below the median in productivity during baseline. The time investment of the expert trainer was reduced by seventy five percent overall to train the eight teachers involved. This suggests that the pyramid system can be effectively deployed to deliver specialized training to teachers in a cost effective manner when the training package is highly defined and organized with strict criterion for mastery of training objectives.

### Personalized System of Instruction (PSI)

There is an impressive collection of evidence to support that contingency based instruction has great advantages over typical lecture and test systems of instruction. In an oversimplified explanation of



Keller's (1968) Personalized System of Instruction coursework is broken down into manageable sections with clear criterion of the expected outcomes for students including test scores, and dates of completion, learning is self paced within the framework of the course, and lecture is typically not part of the learning. This is heavily intermixed with both pre and post testing, and offering the student all of the resources necessary to learn the material. The preponderance of evidence has shown that a PSI will always achieve an equalitative outcome to traditional methods of instruction, but in most cases has exceeded traditional methods while placing most of the onus for teaching squarely on the learner. An excellent example of these types of courses are available in the work of Crone-Todd and Pear (2001) conducting research in the application of Bloom's taxonomy in computer aided PSI using Bloom's taxonomy to assist in determining the benchmarks for learning, in CAPSI-taught courses.

In 1972 Born, Gledhill, and Davis used contingency management procedures similar to PSI and compared them to conventional lecture methods in teaching psychology. In the contingency management course, material was broken down into 14 small units which included four different 10-item multiple-choice quizzes over the week's chapter. The course included a modified *Doomsday Contingency* such that each student was required to either achieve a score of 80% on one of the four quizzes or drop the course. Outcomes showed that no student was disqualified under the Doomsday Contingency and although average test performance was only slightly higher under the contingency management condition, students in the contingency management condition learned on average three more units per half semester. Finally, attitude measures indicated students of contingency management rated the course significantly better than students in the full semester lecture course.

Du Nann, and Fernald, (1976) compared students enrolled in a Psychology of Learning course as assigned to either a lecture section, or personalized instruction sections. In the study all of the students took identical midterms and a final examination. In looking at the outcomes students in the personalized sections were found to be superior to that of students in the lecture section. More importantly however, is that an in depth analysis of class section examination performance by item type revealed that students in the lecture section scored lower on all item types, with the greatest differences occurring on items that required written responses (essay and fill-in items) rather than recognition responses (multiple choice items). Also, data suggested that personalized instruction had its greatest impact on students with *average* to *poor* academic records.

### **The Personalized Training Model**

So what is an efficient model that can be used to effectively train trainees with minimal experience in the field, to gain an understanding of applied behavior analysis and how it is used with children with neurodevelopmental disabilities? The relevant areas of applied behavior analysis are task analyzed into ten components or training classes. Because most of the material is cumulative as well as interrelated, this investigator found it necessary to present smaller amounts of information and require trainees to demonstrate mastery criteria of this information before advancing to the next topic in accordance with Keller's (1967) personalized system of instruction.

A trainee who has experience in applied behavior analysis is given a comprehensive examination; they are then required to attend only the training classes that correspond with the areas where they did not demonstrate mastery. Trainees who have little experience in applied behavior analysis are required to attend all ten training classes. Each training class consists of lecture, scenarios, role playing and/or video tape. After each training class, the trainees are evaluated through testing and only after mastery of the material is demonstrated the trainees are permitted to advance to the next class.

When the trainees successfully complete all ten classes, they are then given a comprehensive quiz

covering the major areas in applied behavior analysis. When the trainees show demonstration of mastery of the material on the comprehensive quiz, they are then required to attend weekly workshops. Workshops consist of specific areas in applied behavior analysis covered in more detail and involve more participation of the trainees.

Trainees are also supervised on the hands-on implementation of the material learned. When working with the children with neurodevelopmental disabilities, the trainees must show mastery of one implementation of a technique before advancing to the next level of implementation during this component of the training as well. After the trainees have completed basic hands-on training the trainees participate in monthly clinics which consist of "trouble-shooting" problem areas in a particular child's program. To ensure maintenance and improvement of skill level, the trainees continue to be evaluated monthly.

Periodically, the trainees are given evaluation forms that give them an opportunity to evaluate our effectiveness as trainers and to indicate any topics they would like more information on.

## **Training Components**

### **Training Class**

The lecture component consists of providing information in an interactive fashion, including scenarios, role playing and/or video tape. There are ten classes and at the end of the lecture, the trainees are then given a quiz on the major areas covered during the class. At the end of the class relevant materials are handed out.

### **Workshops**

After trainees successfully complete all ten training classes, they can attend workshops. Workshops consist of specific areas in applied behavior analysis covered in more detail and involve more interaction on the part of the trainees. When the opportunity arises, this investigator will bring children with neurodevelopmental disabilities to the workshop to demonstrate the implementation of a technique to trainees, when children are not available, this investigator will show a video tape. During Workshops the trainees are quizzed intermittently. At the end of the workshop the trainees are given relevant written materials.

### **Hands-On Training**

Hands on training consists of implementing the material learned, including training in specific programs and data collection across differing treatment formats. All trainees must complete this component of training. Hands-on training for trainees is conducted the full length of the school day. When working with the children with neurodevelopmental disabilities, the trainees must show mastery of one implementation of a technique before advancing to the next level of implementation. After the trainees have completed basic hands-on training the trainees participate in monthly clinics which consist of "trouble-shooting" problem areas in a particular child's program.

### **Trainees Evaluations**

Trainees Evaluations are conducted monthly to ensure maintenance and improvement of each trainee's skill level. The evaluations consist of objective data measures including momentary time sampling and partial interval recording of areas such as child's opportunities to respond, child and trainee's on-task, contingent reinforcement and the proactive use reinforcing appropriate behavior. Each evaluation is a ten minute sample of a trainee's performance.

### Summary & Conclusions

To summarize the topic and enigmatically answer the question originally posed by this literature. If we can offer high quality continuing education in highly specific areas of instruction to teachers requiring only seventy five percent of the time normally required for such instruction and offer it in such a way as it is more likely to be learned and used in the classroom; Can it be done better for less?

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