The Mentoring Program in the Department of Pediatrics, the University of Iowa

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Abstract

In this article, the mentoring program in Pediatrics for PhD-level behavior analysts at The University of Iowa is described.

Keywords Applied behavior analysis · Behavior analysis program · Mentoring · Clinical training

A unique aspect of the behavior analysis training program in the Department of Pediatrics at The University of Iowa is that there has never been a formal training program. We have never had an official funded internship or fellowship program, and there are no required courses (our faculty has taught only one course entitled “Behavioral Assessment and Evaluation” in the College of Education on a voluntary basis for the past 30 years) other than practicum courses within our clinical services. Fewer than half of the 45-plus students who received their PhDs with us came to Iowa to train with our staff or faculty, or to become behavior analysts. Instead, most enrolled in the School Psychology or Special Education PhD programs, and via the course or practicum experiences, came in contact with our faculty and staff in applied behavior analysis and then committed to becoming behavior analysts for their doctoral training.

A Brief Description of the Behavior Analysis Program

Figure 1 provides the most common clinical and research experiences available to students. The vast majority of students (our educational programs were focused specifically on PhD students; very few undergraduate students worked in our clinics or research programs) received training in both the clinical and research programs, with the goals being that

they could direct their own clinical program in a private practice or hospital setting, and that they were independent in conducting applied studies in behavior analysis. We did not distinguish between exemplary clinical practice and exemplary applied research; clinical practice and applied research were both exemplars of behavior analysis.

The two papers in the literature that represent the key features of our training program are Hayes (1985) and Risley (2001). Hayes provided 11 rules for success to students at a talk at ABAI that I attended. I found the rules he provided to be of sufficient value that I gave these rules to every PhD student who worked with me. Most (including me) have the rules posted on our office walls or desks to this day. We believe that professional conduct is just as important as professional skill in achieving success, and the rules developed by Hayes have been a frequent topic of discussion within our group. The chapter by Risley reminded us to be empiricists—to collect the data needed to show that the people we worked with actually benefitted from the work we did with them. The key here for me was that the data were believable, meaning that the data were both reliable (inter-observer agreement) and valid (single case designs). Even in our very brief outpatient evaluations (which averaged approximately 2 h per patient), our goal for every case was to collect “believable” data and to submit those data to peer-reviewed journals whenever possible to obtain the feedback of our peers. Publications obviously have many reinforcers tied to them for doctoral students (and their professors), but a critical role for peer review is receiving objective feedback from experts outside your group. We emphasized that this feedback was the best way to determine if your service is in fact tertiary; and the only way to receive this feedback is to collect believable data that are submitted for peer review. Thus, our faculty spent a

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Fig. 1 The most common clinical and research experiences available to students

great deal of time working with students on paper presentations and manuscript submissions.

Our clinical program started in 1982 with the first clinics directed by applied behavior analysts occurring in Pediatrics (Behavioral Pediatrics Clinic; Cooper, Wacker, Sasso, Reimers, & Donn, 1990) and at the Center for Disabilities and Development (Biobehavioral Service; Northup et al. 1991). Our research program had developed earlier (Wacker & Berg, 1983) and the success of the research program in terms of publications and grant funding led to the development of our clinical programs. Of critical importance was that the grant projects funded countless students to work on research studies, and those same students then also worked in our clinics.

Mentoring at Iowa thus occurred primarily within two contexts: (a) as part of a student's work within a clinic and (b) as part of a student's work within funded research grants. All students had multiple leaders (faculty, staff, and senior students) who worked closely and directly with them. A brief description of the mentoring provided at Iowa within each of these contexts is summarized below. In preparation for this article, I sent former students a brief survey, with questions pertaining to the training they received in clinical practice and research. More than 30 former students completed the survey and selected results are mentioned in the following sections.

Mentoring in a Clinical Context

As shown in Fig. 1, students had numerous options for completing clinical work, and many survey respondents mentioned the benefits of having multiple supervisors in multiple clinics. Every clinic was fee-for-service, meaning that insurance paid for the evaluations. Thus, all cases were "real," and parents often waited several months for the evaluation. These were high-stress clinics, and our repeatedly stated goal was to provide the best clinical service possible. Expectations, therefore, were high from both parents and faculty.

In each clinic, an advanced PhD student functioned as the "lead student." Each lead student had worked for at least a year in the clinic and demonstrated excellent clinical and professional skills. This student was administratively responsible for the clinic and for the junior students working in the clinic. The lead student assigned cases to other students, helped the students prepare for the clinic evaluation (e.g., phone calls to parents in advance of clinic to conduct an ABC interview), assisted the students in conducting the evaluation, edited the reports, and supervised follow-up. The role of the lead student was intense, time consuming, and by report, very rewarding. The lead students were most often volunteers, working at least 20 h per week without pay and often without receiving any credit hours toward their degrees. They received frequent, often critical feedback from me that was compensated only by having increased access to me. A favorite saying was, "It's time, not praise," meaning that a supervisor's time, not their praise, is the contingent reinforcer for exemplary work.

Each morning before clinic, the students presented their case to an interdisciplinary team by briefly presenting the results of the ABC interview, their hypotheses for why problem behavior was occurring, the proposed assessment plan, and the treatment plan assuming that the hypothesis was confirmed. My role was to strongly question the student, to prompt a solid defense of his or her assessment plan, and to ask questions ranging from how the plans were tied to the literature to how the plans would be helpful to the family.

- Survey question: What clinical training experience was most important to you?

Over 70% of the students reported that morning staffings were the most important, with most also saying that they were the most difficult experience. We tried to teach that feedback should be contingent, and that if our expectations are to be the very best at what we do, then we should seldom receive praise. We also used the staffings to teach professional behaviors, such as maintaining composure when challenged, and to separate "the meaning of a message from the way it is delivered"

(i.e., a good point may be made in a bad way and vice versa). Students needed to use appropriate operant language, to be familiar with the literature, and to think quickly and react appropriately in front of the multidisciplinary team attending the staffings. Students were also expected to honor the integrity of the family (to choose their terms and labels carefully), the members of the interdisciplinary team (which often involved nurses, speech and language pathologists, social workers, and physical and occupational therapists), and our field of behavior analysis. Students repeatedly said in the survey that they appreciated that our team was their harshest critic, both in the clinics and in research contexts such as practice sessions for ABAI. The key here was that this harsh criticism was combined with strong support in the form of access to the supervisor. Once the critical feedback session was over, the student could expect the support (and attendance) of the supervisor during their clinical evaluations, paper presentations, and other professional activities.

- Survey question: What clinical procedure was most important to you in becoming an accomplished applied behavior analyst?

Almost every student responded to this question by saying that conducting multiple functional analyses in our clinics and research programs was the single most important training experience. When we initiated our clinical programs in the 1980s, we were most fortunate that Brian Iwata agreed to spend several days with us explaining functional analysis procedures, presenting on the procedures at Pediatrics Grand Rounds, and providing tutorials to our students and staff (there were three total students, staff, and faculty in behavior analysis at the time of his visit). Functional analysis models of assessment have been a staple of our clinical programs, and most PhD students reported that they could not count the total number of functional analyses they completed in our clinical services. The students were expected to begin conducting the analyses within the first 2 or 3 weeks in the clinic. We used a fading model in which the lead student or faculty member conducted the initial analyses while the student observed, then the supervisor conducted analyses concurrently with the student, and then faded his or her presence across repeated evaluations as the student became increasingly independent. The functional analyses developed by Iwata, Dorsey, Slifer, Bauman, and Richman (1994), as well as by Carr and Durand (1985), are brilliant clinical procedures that also provide for excellent training opportunities for trainees. (We have trained Pediatrics and Child Psychiatry residents, medical students, school staff, as well as PhD students, to conduct functional analyses in a variety of clinical and school situations.) Conducting analogue functional analyses shows students the value of being precise in specifying the

independent variables, of microscopic analysis of the data, and of conducting the sessions within single case designs. Because they are such powerful procedures in terms of successfully identifying the variables maintaining problem behavior, the students often experience immediate reinforcement (i.e., a clearly identified function of problem behavior). The implementation of functional analysis procedures is the cornerstone of our clinical and research training programs and was the primary procedure we used to train students in behavior analysis.

Within the clinical programs, we used “gold standard procedures” such as functional analysis and had very high expectations for the students to perform at a gold standard level. Contingent reinforcement came primarily from the results obtained from their clinical work rather than from praise from their supervisors. There were two categories of “naturally occurring” reinforcers: (a) the improvement in behavior with the kids we worked with and (b) the collection of believable data. Having two sources of reinforcement available during every clinical evaluation made the probability of reinforcement very high. The supervisor used both contingent and noncontingent attention and praise to augment these naturally occurring reinforcers to maintain gold standard behaviors and to make even the most stressful clinics “fun.” A favorite saying reported by the students was “If it’s not fun, it’s not worth it.”

Mentoring in a Research Context

Our goal was for every student to have co-authored five publications during their graduate careers, with at least one being a first-authored study, usually their dissertation. We used three situations to mentor the students in research (see Fig. 1). As mentioned previously, we do not distinguish between exemplary clinical practice and exemplary applied research. All clinical evaluations and applied studies are conducted to obtain believable data. Every clinic had a research component, and every PhD student was expected to conduct research in the clinics. Each clinic had a research team, and these teams most often met once every other week. Similar to morning staffings, students were expected to present their research ideas, and then to provide updates on their progress with the study. Every member of the team, which was usually one faculty member and two to four students, served as co-authors with specific roles on every study.

The team meetings were augmented by one-on-one weekly meetings with the supervising faculty. I used these meetings to prompt the students to read the literature, to tie their studies—no matter how applied—to underlying basic processes, and to become experts in single case design. Extensive editing of research papers and presentations occurred between scheduled meetings, and the meetings were also used to convey the rationale for the suggested edits.

- Survey question: What conceptual, theoretical, or empirical model was the most important to your development as a behavior analyst?

There were two types of modal responses to this question. The first response was more generic and indicated that the emphasis on identifying basic processes within our “every day” clinical work was the most important conceptual lesson they learned. The customization of evaluation plans was based on a problem solving model in which we assumed that behavior was lawful and responsive to specific independent variables in the environment. Within a single case design, we conducted experimental analyses to identify those variables in a believable manner, and then submitted our findings to peer-reviewed journals after several rounds of extensive editing.

This approach to conducting applied research within a translational framework was especially emphasized within our funded grant projects. For most of the students, there were three ongoing funded research or training projects during their time in the PhD program: (a) a very applied project (e.g., telehealth), (b) a school-based training project that in recent years involved training school teams to conduct procedures such as functional analysis in the schools, and (c) a translational research project (e.g., automatic reinforcement or behavioral persistence). In addition to the research meetings associated with the clinics, most students worked on one or two of the funded projects over the course of a 5-year period, and attended weekly research meetings associated with those projects. They again were expected to present at the meetings and to demonstrate a thorough knowledge of the procedures of the grants, the literature associated with the grant, and the designs used in the studies. Students were encouraged to develop “complementary” studies, meaning studies that were clearly associated with the overall aims of the project but that constituted a unique analysis. These studies often evolved into dissertation topics.

Because there were few courses in behavior analysis (one exception was the basic research courses taught by Ed Wasserman in Psychology), we developed an “advanced seminar” series. Faculty, staff, and senior students volunteered to present on topics such as schedules of reinforcement, specific behavioral mechanisms or models, or translational research for up to one semester during every other week time periods. Both the presenter and the students participated without pay or course credit. Throughout the survey, students commented positively and repeatedly about how important these seminars were to their development as behavior analysts and how the seminars linked their clinical work to translational research.

The second modal response was specific to identified conceptual models. The students most often identified behavioral economic theory or behavioral momentum theory as guiding models, but also frequently mentioned evaluations that altered

motivating operations, stimulus control, or preferences. Within the survey, many students expressed how surprised they were to learn that as clinical professionals, conducting translational research was reinforcing and that reading about basic processes shaped their clinical expertise. The theme that summarized their responses was that to help as many kids as possible, applied behavior analysts have to be familiar with basic processes and conceptual models because these processes and models guide their clinical work—especially when difficulties occur.

Summary

The contingencies associated with clinical practice and applied research were the primary variables that shaped and maintained professional behavior. Mentorship largely consisted of providing opportunities for students to maximize their encounters with these contingencies and to deliver both contingent and noncontingent praise and support for engaging in tertiary-level clinical activities and translational research that helped as many kids as possible. Survey respondents repeatedly mentioned that the combination of DRA and noncontingent reinforcement from the faculty was a key component for their achievement. The DRA component refers to the reinforcers obtained from doing exemplary work: clinical, research, and dissemination. The goals were high, the criticism often harsh, but the positive reinforcers earned by the students were sufficient to produce durable responding. The noncontingent reinforcement refers to the time the faculty devoted to the activities of the students. Faculty and staff often conducted clinical evaluations concurrently with students, attended all practice talks for professional meetings, attended most of the presentations and posters at ABAI, and met at least every other week individually with every student. Most often, more than one staff or faculty member met every week with every student. Of equal importance, the alumni also attended the talks at ABAI and provided tutoring to the students throughout the year as desired. Taken together, the DRA and noncontingent reinforcement components offered by the current faculty/staff, lead students, and alumni provided a dense schedule of reinforcement for achievement.

Finally, to supplement the reinforcement contingencies, we developed a series of rules, emitted as sayings, that guided our daily behaviors. (Several of these sayings are provided throughout this paper.) Many of these sayings represent a direct linear extension from my mentor at Arizona State University, Dr. Lee Meyerson. Often referred to as “Meyersonisms” by his graduate students, they included “Time, not praise” mentioned earlier.

- Survey question: What guideline or quote (from anyone) was/is most influential to you?

The modal response originated, of course, with Dr. Meyerson: “Control what is controllable.” Dr. Meyerson gave me this statement when I graduated with my PhD from ASU and asked for his best advice for doing well at my new position at Iowa. The message here is that all you can do is to control what is controllable to you. I later added “...and hope the rest doesn’t do you in” because sometimes what we can control is not sufficient for the changes in the environment that we need. In any professional endeavor, we need to focus our behavior on those variables under our control (e.g., learning about basis processes and being committed to helping as many kids as possible), and if we do that, we increase our probabilities of success. This is the overarching message we have worked to instill in our graduates for nearly four decades.

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