# Determining Essential Content for Applied Behavior Analyst Practitioners

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This article reports the procedures and findings of a job-analysis study recently conducted by the Behavior Analyst Certification Board, Inc. (BACB) and considers some implications of the survey data collected during this process. The job analysis focused on the applied sector of the field of behavior analysis and limited its inquiry into matters of professional competencies and training. The results represent a unique sample of demographic information and valuable collection of opinions regarding the competencies and training required of applied behavior analyst practitioners. Because these opinions have a direct effect on certification task standards and content of the BACB credentialing examinations, which in turn drive the curricula of undergraduate and graduate programs in applied behavior analysis, it is important to consider what these views might mean for the continuing evolution of the field of behavior analysis.
*Key words:* certification, profession, applied behavior analysis, credential, practitioner

This article reports the procedures and findings of a job-analysis study recently conducted by the Behavior Analyst Certification Board, Inc. (BACB) and considers some implications of the survey data collected during this process. The job analysis focused on the applied sector of the field of behavior analysis[1] and limited its inquiry into matters of professional competencies and training. The results represent a unique sample of demographic information and a valuable collection of opinions regarding the competencies and training required of applied behavior analyst practitioners. Because these opinions have a direct effect on certification task standards and content of the BACB credentialing examinations, which in turn drive the curricula of undergraduate and graduate programs in applied behavior analysis, it is important to consider what these views might mean for the continuing evolution of the field of behavior analysis.

## JOB-ANALYSIS PROCESS

### Job Analysis

One of the first steps in developing a valid credentialing examination is defining the body of knowledge required for competent practice of the profession. It is critical that credentialing agencies establish a strong link between the practice of the profession and the certification examination (Browning, Bugbee, & Mullins, 1996; Schmitt & Shimberg, 1996).

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This article is dedicated to Michael J. Hemingway, who as the Senior Behavior Analyst in the Florida Department of Families and Children and a founding director of the Behavior Analyst Certification Board, was critical to the development and success of the BACB certification process.

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[1] In this paper, we use the phrase *applied behavior analysis* to refer to a discipline that encompasses both an area of scientific investigation that addresses the need to manage behavior for practical purposes and the technology that has evolved from this literature. Thus, use of the phrase may refer to the applied research literature, the technology itself, or the field defined by these scientific and professional activities.

High-stakes examinations, those that are used to determine competence necessary to practice within a given profession, must be developed in compliance with accepted standards using best psychometric practices. Accepted standards include the *Equal Employment Opportunity Commission Guidelines on Employment Testing Procedures* (1978) and the *Standards for Educational Testing* (1999) developed by the American Psychological Association, the American Educational Research Association, and the National Council on Measurement in Education. Both sets of standards require that a formal study of the profession be conducted to determine whether the content coverage of the examination accurately reflects the practice of those performing the job. These studies are known as job analyses, and their findings serve as the primary source of evidence for the content validity of the credentialing examination.

It is important to note that a job-analysis study represents a snapshot of the fundamental job duties and essential functions of a profession at a given point in time. These studies do not attempt to reflect cutting-edge practices or to describe new trends and directions in which a profession might move. Instead, they reflect those activities that are generally accepted by practitioners at the time the study is completed. As such, the useful life of a given study is limited, and new studies must be conducted periodically. The required frequency for conducting new job analyses will vary with the needs of the profession. Studies are warranted more often during times of rapid change and new discoveries within a profession than during periods of relative stability. In general, most professions require a new job analysis or revalidation of an existing analysis every 5 to 10 years.

The findings of a job analysis can have far-reaching effects, going well beyond the simple definition of topics to be covered on a credentialing examination. They may be used to define the scope of work for professionals in specific settings, training curricula for job incumbents, or university course sequences for students who aspire to enter the profession.

## DETERMINING THE SCOPE OF WORK

### Orlando Expert Panel

The BACB, in collaboration with the Florida Department of Children and Families (hereafter referred to as Florida), conducted the present job-analysis study to update the content of the BACB certification examinations to reflect current practices in the field of behavior analysis. The current study addressed the content of both the Board Certified Behavior Analyst (BCBA) and Board Certified Associate Behavior Analyst (BCABA) examinations.

The Florida Department of Children and Families and the Florida Department of Professional Regulation had conducted the most recent job-analysis study for the examinations in 1994. That study led to the development of a comprehensive Second Edition Task List consisting of broad content areas under which a number of more specific task statements were placed. Task statements were then broken down into specific knowledge, skill, and ability statements that were incorporated into the Task List and, in turn, formed content stimuli used in constructing examination questions. Florida further revised the Task List in 1997, resulting in the 1997 revised version of the Second Edition Task List.

In May 1998, the BACB and Florida held a subject-matter expert-panel meeting (at the Association for Behavior Analysis convention in Orlando) to discuss the need for revisions to the eligibility criteria for examination and the Revised Second Edition Task List. The expert panel suggested that a number of revisions be made, both to the eligibility criteria and to the Task List, and a draft Third Edition Task List was constructed. The panel's recommenda-

tions for revisions in the eligibility requirements and Task List, combined with the general requirement to update job analyses for professional credentialing programs every 5 to 10 years, set the occasion for a new job-analysis study.

## Los Angeles Expert Panel

The Florida Department of Children and Families and the BACB signed an agreement in January 1999 that formalized the cooperative relationship between the two entities. In addition to other provisions, the agreement provided for cooperative efforts to develop examination materials to accepted professional standards, allowed mutual access to examination materials, allowed the BACB to develop an international certification program, and allowed the transition of Florida certification activities to the BACB, should Florida desire to do so. The BACB and Florida signed a contract in 2000 in which the BACB, in addition to its own responsibilities, was required to assume the responsibilities of Florida in completing the new job-analysis project. In 2000, the BACB contracted with Professional Testing Corporation of New York City to provide expert consultation and assistance with a subject-matter expert-panel meeting. In 2001, the BACB contracted with Professional Testing, Inc. of Orlando to provide expert consultation and assistance with the remaining job-analysis process.

In February 2001, the BACB and the Professional Testing Corporation convened a 16-member subject-matter expert panel (at the California Association for Behavior Analysis conference in Los Angeles) to begin development of an updated Task List to serve as the basis for a comprehensive job-analysis study (see Appendix A). This expert panel met for 2 days and substantially revised the 1999 Orlando draft Task List. The panel reviewed the proposed content and recommended an increase in the course work requirement for the Eligibility for Examination Standards

for both certification levels and revised the number of Task List Content Areas from 16 to 10. The panel also discussed the format for the job-analysis survey and made recommendations regarding the wording of the anchor statements for the rating scale. The panel agreed that the use of a single "Importance" scale remained appropriate based on the rationale used in the 1994 study and recommended that the new study should have separate ratings for the two certification levels.

## The Pilot Test Panel

In March 2001, a pilot version of the job-analysis survey was developed to assess the content of the draft Third Edition Task List and the new course work eligibility requirements recommended by the Los Angles expert panel and BACB legal counsel. In June 2001, the draft survey was mailed to a pilot test panel composed of an international sample of 38 expert behavior analysts (see Appendix B). These individuals were asked to make comments and suggestions regarding the draft job-analysis survey instrument, in addition to completing it. Responses were received from 36 members (95%) of the pilot test panel. The pilot test confirmed that the design of the basic draft job-analysis survey was satisfactory. None of the tasks was eliminated as a result of the pilot test, although several minor wording changes were made to the Task List and survey. In addition, the pilot test provided significant support for the recommended increase in the course work eligibility requirement at both certification levels. The magnitude of the support for these increases was sufficiently high that additional survey work on this topic was not required, and the BACB elected to move forward with the recommendations. A final version of the job-analysis survey was prepared in August 2001.

## SAMPLE SELECTION AND SURVEY

The survey sample consisted of all (721) BCBAs, all (398) BCABAs, and

## TABLE 1

### Summary of job-analysis survey returns

| Group | Invited | Returned unde-liverable | Effective sample size | Responding | Response rate |
|-------|---------|-------------------------|----------------------|------------|---------------|
| BCABA | 398 | 9 | 389 | 148 | 38% |
| BCBA | 721 | 11 | 710 | 356 | 50% |
| ABA members | 396 | 16 | 380 | 100 | 26% |
| Total sample | 1,515 | 36 | 1,479 | 604 | 41% |

396 noncertified full members of the Association for Behavior Analysis (ABA) selected by the BACB. A total of 1,515 behavior analysts were included in the demographically diverse sample group.

The survey design called for BCBAs and ABA members to rate the importance of all tasks for both levels of certificants (BCBA and BCABA). The BCABAs were asked to rate only the importance of the tasks for BCABA-level certificants. BCBAs and ABA members were presented with both sets of rating scales and BCABAs with only the BCABA set of rating scales.

Although the job-analysis survey plan called for a paper-and-pencil survey, the job-analysis survey was conducted on-line because of the September 11, 2001, terrorist attacks and the subsequent anthrax attacks via U.S. mail. A California-based software consultant was hired to convert the paper-and-pencil survey for Internet-based delivery. The survey instructions were completely rewritten to reflect the on-line delivery system; however, the basic Task List and demographic questions remained unchanged.

An invitation postcard was mailed to each member of the survey sample. Individual access codes were printed on the postcard front, and a brief description of the survey process and instructions for accessing the survey via the BACB Website were printed on the back. On January 31, 2002, invitations were mailed to the survey sample group of 1,515 behavior analysts. Thirty-six of the invitation postcards were

returned as undeliverable, yielding an effective sample size of 1,479. On February 13, 2002, a reminder postcard was sent to 1,350 invited participants who had not yet responded to the survey. On March 15, 2002, an e-mail reminder was sent to all individuals who had e-mail addresses on file and who had partially completed the survey, and the response deadline was extended until March 30, 2002.

## SURVEY DEMOGRAPHIC FINDINGS[2]

### Survey Returns

Table 1 shows a summary of job-analysis survey returns. A total of 643 responses were received. There were 39 respondents who answered the demographic questions but did not rate any of the task statements. Their data were not included in the analyses. This resulted in 604 usable responses, an overall response rate of 41%. Of the usable responses, 519 were fully complete. Data from the 78 remaining partial responses have been included in the analyses. Of the 604 individuals who responded, 38% were certified at the associate level, with presumably little or no graduate training in the field. Of the remainder, 50% were BCBAs, and 26% were drawn from the

[2] Not all of the survey respondents completed the demographic information section. Percentages are calculated based on the number responding to each question. All percentages are rounded to the nearest whole number. For items for which the actual percentage calculated is less than 0.5%, the percentage is reported as <1%.

membership of ABA (full members were individually selected based on their applied interests and geographical representation). Of course, there was overlap between these two groups (i.e., some certified individuals were members of ABA), even though only non-certified members of ABA were reported as members of that group.

This sample necessarily represents both levels of certification in the field of applied behavior analysis. The inclusion of individuals whose training is largely at the bachelor's level could provide opinions that are systematically different from individuals who received a graduate degree in the field. However, the data are presented separately for BCABAs and the two groups holding graduate degrees, so this issue can be evaluated. In general, it is not clear what criteria would be widely agreed upon as defining membership in this field.

With reference to the larger field of behavior analysis, it was intended that this sample overrepresent individuals whose training and interests are in applied areas. It is not clear, of course, how members of the field of behavior analysis actually might be distributed between the experimental analysis of behavior and applied behavior analysis, if such a distinction is meaningful. However, the inclusion in the sampled group of all certificants at the time of the survey and only 396 noncertified members of ABA could have yielded a mix of basic and applied interests that do not match the representation of those interests within the full ABA membership, even though ABA membership certainly does not include all individuals with training and interest in the larger field and is only one way of defining the field.

In contrast, it could also be argued that the opinions of noncertified individuals in the survey cohort might systematically differ from those who had primarily service-delivery interests. Given that the objective of the job-analysis process is to contribute to the development of a set of task standards representing what practitioners should know, one could argue that a college professor who is not experienced in the delivery of services might provide ratings different from those who have such field experience. This variety is intended, however, both by the BACB as well as by the underlying legal and professional standards for this process.

There are other arguments that might be made about the representativeness of the sample cohort that might be taken into account in interpreting the data, particularly if those interpretations are aimed at general issues in the field at large. For example, it is certainly the case that BACB certificants and ABA members do not include all individuals who have graduate training in behavior analysis and who may be working in the field in some capacity, but it is not clear how large this remaining population is or how to gain access to it. However, although the purpose of the survey was to obtain reactions of "the field" of behavior analysis in some collective sense, there is no gainsaying the necessity of including the present certificants in the sample cohort, even though the resulting sample, by design, might not represent the proportional interests of all segments of various definitions of the field.

## Age, Gender, Race, and Geography

Table 2 shows that the survey respondents were, on average, in their early 40s (ranging from 22 to 78 years of age) and, by a relatively small margin, more likely to be female than male (55% vs. 45%). The vast majority was white, although 14% indicated other races.

Table 3 shows that within the United States, the geographical distribution of the respondents was not proportional to state population density. Florida was especially heavily represented, with 229 respondents. This finding is not surprising given the 20-year history of certification by this state. There were six states that had over 20 respondents:

## TABLE 2

### Major demographic characteristics

| Demographic characteristics | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| Age | | | | |
|   Mean | 36.73 | 40.54 | 51.57 | 41.42 |
|   Range | 22–67 | 24–72 | 29–78 | 22–78 |
|   Standard deviation | 10.32 | 9.87 | 9.36 | 11.01 |
|   Number responding | 146 | 333 | 96 | 575 |
| Gender | | | | |
|   Male | 22% (34) | 44% (156) | 80% (90) | 45% (280) |
|   Female | 78% (118) | 56% (201) | 20% (22) | 55% (341) |
|   Number responding | 152 | 357 | 112 | 621 |
| Race | | | | |
|   White | 80% (114) | 87% (290) | 91% (89) | 86% (493) |
|   Hispanic | 7% (10) | 4% (15) | 3% (3) | 5% (28) |
|   Asian | 3% (4) | 4% (12) | 2% (2) | 3% (18) |
|   Black | 5% (7) | 1% (3) | 0% (0) | 2% (10) |
|   American Indian | 0% (0) | 1% (2) | 0% (0) | 0% (2) |
|   Other | 6% (8) | 4% (12) | 4% (4) | 4% (24) |
|   Number responding | 143 | 334 | 98 | 575 |

California, Florida, Massachusetts, New York, Pennsylvania, and Texas. Of these, all except Massachusetts had previously conducted a state behavior analyst certification program. Six additional states had over 10 respondents: Connecticut, Kansas, Michigan, New Jersey, Tennessee, and Washington. Other states had low representation. This uneven distribution of respondents was likely determined by whether states had a certification program prior to the development of the BACB program or by the number of academic training programs in each state; however, other factors unique to individual states also contributed.

The survey process also sampled 83 non-U.S.-resident behavior analysts in 25 other countries (Table 4). Of these, 18 individuals responded, representing 10 countries. The extent to which this representation was at variance with the distribution of behavior analysts in various countries is not known.

### Training and Experience

Table 5 shows that the distribution of respondents' highest degree data varied with the breakdown of the sam-

ple into the two certificant levels and the third group drawn from the full membership of ABA. Naturally, the BCABA group included the highest number of individuals holding only the bachelor's degree, although approximately one third of this group had also completed a master's degree. (Their master's degrees were most likely in a program that did not include sufficient course work to qualify them to take the BCBA exam.) Although 56% of the BCBA group held the master's as their highest degree, 42% had earned a doctorate. Most of the individuals drawn from the ABA membership held the doctorate, suggesting the importance of including this different cohort in the survey.

Respondents were instructed to indicate their behavior-analysis experience, defined as the number of years during which they had been working in the field, regardless of whether they were certified as a behavior analyst for all or part of that time. Table 6 shows that years of general experience in the field were lowest for the BCABA group, about twice as high for the BCBA group, and almost twice as high

## TABLE 3

**Geographical distribution of survey respondents in the United States**

| State | | State | | State | | State | |
|---|---|---|---|---|---|---|---|
| AL | 3 | ID | 1 | MO | 5 | PA | 40 |
| AR | 2 | IL | 5 | MS | 2 | RI | 5 |
| AZ | 3 | IN | 1 | NC | 3 | TN | 15 |
| CA | 47 | KS | 11 | NE | 1 | TX | 22 |
| CO | 2 | KY | 2 | NH | 2 | UT | 2 |
| CT | 11 | LA | 3 | NJ | 15 | VA | 8 |
| DE | 1 | MA | 33 | NM | 1 | WA | 11 |
| FL | 229 | MD | 6 | NY | 28 | WI | 4 |
| GA | 6 | ME | 3 | OH | 8 | WV | 6 |
| HI | 1 | MI | 11 | OK | 5 | Guam | 1 |
| IA | 2 | MN | 5 | OR | 2 | | |

again for the ABA group. The fact that the BCABA group reported an average of less than 7 years in the field suggests that the availability of this credential has attracted newcomers to behavior analysis. Other BACB data show that currently over 40% of the individuals who take the certification exam do so at the BCABA level, although a disproportionately large number of these certificants are located in Florida. The proportion of these individuals that might eventually apply to master's programs in the field is obviously unknown.

Table 7 shows the manner in which the individuals in these three groups obtained the major portion of their training in behavior analysis. Not surprisingly, those with graduate degrees

## TABLE 4

**Geographical distribution of survey respondents outside the United States**

| Country | |
|---|---|
| United Kingdom | 5 |
| The Netherlands | 1 |
| Sweden | 2 |
| Singapore | 1 |
| Portugal | 1 |
| New Zealand | 1 |
| Japan | 1 |
| Iceland | 2 |
| Canada | 3 |
| Brazil | 1 |

reported that most of their training came from graduate courses. It is notable, however, that 41% of the BCABA group reported that their training came mostly from on-the-job experiences, and an additional 29% indicated that their training came from nonuniversity training activities. (These reports should be tempered by the fact that individuals can qualify to take the BCABA exam only by providing acceptable evidence of having taken at least 90 classroom hours of college or university course work in behavior analysis.)

We feel that this evidence should be a concern for the field. It is our experience that it is difficult for newcomers to the field to develop a thorough understanding of the basic principles and procedures of applied behavior analysis while working as an employee or through workshops or short courses. The contingencies of the academic environment seem better suited for this curriculum, which by 2005 will include 135 classroom hours of instruction for the BCABA certificate.

The certification program seems to be having considerable impact on academic training resources at the master's level, as evidenced by the increasing number of colleges and universities whose curricula have been preapproved as meeting BACB course work requirements. However, undergraduate programs have not shown similar

## TABLE 5

### Highest educational degree by subgroup

| Degree | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| Bachelor's | 58% (85) | 0% (0) | 5% (5) | 15% (90) |
| Master's | 33% (49) | 56% (199) | 6% (6) | 42% (253) |
| Specialist | 4% (6) | 2% (6) | 1% (1) | 2% (13) |
| Doctorate | 5% (7) | 42% (148) | 93% (93) | 41% (248) |
| Number responding | 147 | 353 | 105 | 605 |

growth. These issues will be considered further below. Employers seem to have more positions for individuals with the BCABA credential than for the BCBA credential, so it reasonable to wonder why this demand has not generated more baccalaureate level programs (less than one third of BCABAs report that most of their training was received in regular college courses). The limitations may lie in demand for such training among undergraduate students. Undergraduate psychology majors, for example, are not typically informed about and guided toward distinct career options. Indeed, some portion of those who eventually earn their BCABA certificate may develop this interest only after graduating and getting a job in the area of developmental disabilities. This possibility raises the question of how teachers can attract such individuals and encourage them to enroll in appropriate courses before they graduate.

It may also be that faculty who develop or staff graduate programs in behavior analysis simply run out of instructional resources when considering the opportunity to extend this specialization to the undergraduate level. Departments with sufficient faculty expertise in behavior analysis to staff a master's program may find themselves with insufficient instructional time to initiate a two- or three-course sequence at the undergraduate level.

### Primary Emphasis, Position Title, Area of Work, and Age Group

The data in Table 8 reveal how respondents categorized the focus of their current work in behavior analysis. The availability of a number of categories probably encouraged many to select a label other than behavior analysis, which netted only 51% averaged across the three cohorts. The next largest category was education, with 17%. Education was selected by 22% of the ABA group, presumably because a number of these respondents work in psychology departments (15% of this group selected psychology). Positive behavioral support was the next largest category, selected by 8%, followed closely by psychology with 7%. Only 4% of respondents marked "other," suggesting that the listed choices adequately covered self-selected interests,

## TABLE 6

### Professional experience by subgroup

| Experience | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| Average experience | 6.58 | 13.89 | 23.96 | 13.92 |
| Experience range | 0–30 | 0–41 | 0–50 | 0–50 |
| Standard deviation | 5.56 | 8.58 | 9.59 | 9.80 |
| Number responding | 147 | 355 | 101 | 603 |

**TABLE 7**

**Primary source of training in behavior analysis by subgroup**

| Training | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| On-the-job training | 41% (60) | 23% (80) | 14% (14) | 26% (154) |
| Nonuniversity coursework or continuing education activities | 29% (42) | 4% (15) | 1% (1) | 10% (58) |
| Undergraduate college or university courses | 10% (14) | 2% (6) | 2% (2) | 4% (22) |
| Graduate college or university courses | 21% (30) | 71% (251) | 86% (86) | 61% (367) |
| Number responding | 146 | 353 | 103 | 602 |

most of which garnered only a small percentage of the respondents.

The data in Table 9 clarify the expected finding that BCABAs and BCBAs worked in settings where they hold titles such as behavior analyst, consultant or trainer, psychologist or therapist, or teacher. Members of the ABA cohort were most likely professors or administrators. Table 10 confirms this picture by showing that aside from the one third of the ABA group that taught in higher education, most respondents worked with developmentally disabled individuals, including autism, where such titles are common. It is notable, though probably not surprising for many readers, that relatively few worked with individuals with mental illness or in business, industry, or government settings. Table 11 shows

that the majority of both certificant cohorts work predominantly with children, with adults representing the next largest group. Interestingly, infants and geriatric populations represent a very small proportion of the age groups with which all cohorts are involved.

These findings raise the obvious question of why applied behavior analysis is so narrowly focused on applications in the area of developmental disabilities. "Because that is where the jobs are" is probably a reasonable answer, but it only leads to the next question of why there are not more opportunities to work with nondisabled populations. It may be the case that the proportion of individuals with interests in development disabilities ensures this focus in the applied literature, which in turn furthers the representation of such

**TABLE 8**

**Primary emphasis by subgroup**

| Primary emphasis | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| Behavior analysis | 45% (66) | 57% (202) | 38% (39) | 51% (307) |
| Positive behavioral support | 13% (19) | 7% (24) | 3% (3) | 8% (46) |
| Precision teaching | 1% (2) | <1% (2) | 3% (3) | 1% (7) |
| Direct instruction | 3% (4) | <1% (2) | 0% (0) | 1% (6) |
| Organizational behavior management | <1% (1) | 2% (8) | 8% (8) | 3% (17) |
| Behavior therapy | 6% (9) | 4% (14) | 9% (9) | 5% (32) |
| Communication disorders | 1% (2) | 2% (7) | 0% (0) | 1% (9) |
| Education | 17% (24) | 15% (54) | 22% (23) | 17% (101) |
| Medicine | 0% (0) | <1% (1) | 0% (0) | <1% (1) |
| Pharmacology | 0% (0) | 0% (0) | 0% (0) | 0% (0) |
| Psychology | 4% (6) | 7% (23) | 15% (15) | 7% (44) |
| Social work | 1% (2) | <1% (1) | 0% (0) | <1% (3) |
| Counseling | 2% (3) | 0% (0) | 0% (0) | <1% (3) |
| Other | 6% (8) | 4% (13) | 3% (3) | 4% (24) |
| Number responding | 146 | 352 | 103 | 601 |

## TABLE 9

### Position title or career track by subgroup

| Position title | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| Administrator | 7% (11) | 16% (57) | 14% (14) | 14% (82) |
| Student | 4% (6) | 2% (7) | 0% (0) | 2% (13) |
| Consultant or trainer | 18% (26) | 15% (52) | 5% (5) | 14% (83) |
| Professor or academic instructor | 1% (1) | 14% (48) | 64% (66) | 19% (115) |
| Psychologist or therapist | 8% (11) | 10% (35) | 10% (10) | 9% (56) |
| Researcher | 1% (1) | 1% (3) | 0% (0) | 1% (4) |
| Social worker | 1% (1) | 0% (0) | 1% (1) | <1% (2) |
| Speech-language pathologist | 0% (0) | 0% (0) | 0% (0) | 0% (0) |
| Schoolteacher | 12% (17) | 3% (9) | 0% (0) | 4% (26) |
| Behavior analyst | 38% (56) | 37% (130) | 5% (5) | 32% (190) |
| Other | 11% (16) | 3% (12) | 2% (2) | 5% (30) |
| Number responding | 146 | 353 | 103 | 602 |

interests in textbooks and among students. However, the applied literature also describes an impressive range of applications beyond developmental disabilities, although this focus has always been dominant. Business, industry, and government represent a notable focus of some of these applications and involve large employment markets. Why, then, has this career path within behavior analysis not flourished as one might have anticipated? What are the factors that augment the attractiveness of different career directions among applied behavior analysts? Does it have to do with the fact that behavior-analysis training is largely offered in the context of departments of psychology, which attract students interested in the helping professions? Might it be the case that certification has not yet become widely recognized or important in these employment areas?

Finally, the survey also asked respondents about supervisory issues. The responses to these questions show that 66% of BACB respondents indicated that they supervised others who provide behavior-analysis services. Of the respondents in this supervisory role, 26% indicated that they supervised BCABAs. The data also show that 65% of the BCABA respondents provided behavior-analysis services under supervision, and 82% of these

## TABLE 10

### Primary client population by subgroup

| Primary area | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| Developmental disabilities | 25% (37) | 38% (132) | 20% (20) | 32% (189) |
| Autism | 25% (36) | 29% (101) | 11% (11) | 25% (148) |
| Mental illness | 6% (9) | 6% (20) | 8% (8) | 6% (37) |
| Alcohol or drug abuse | 0% (0) | 0% (0) | 0% (0) | 0% (0) |
| Business, industry, or government | <1% (1) | 2% (8) | 7% (7) | 3% (16) |
| Education (regular education–K12) | 9% (13) | 2% (6) | 0% (0) | 3% (19) |
| Education (special education) | 23% (34) | 14% (51) | 12% (12) | 16% (97) |
| Education (college) | <1% (1) | 6% (20) | 33% (33) | 9% (54) |
| Dependency or foster care | 5% (7) | 2% (7) | 0% (0) | 2% (14) |
| Families or couples | 3% (4) | <1% (1) | 0% (0) | 1% (5) |
| Health | <1% (1) | <1% (2) | 2% (2) | 1% (5) |
| Other | 2% (3) | 1% (4) | 9% (9) | 3% (16) |
| Number responding | 146 | 352 | 102 | 600 |

## TABLE 11

### Age group representing the majority of respondents' clients by subgroup

| Group | BCABA | BCBA | ABA | Total sample |
|---|---|---|---|---|
| Infants | 0% (0) | 1% (2) | 2% (2) | 1% (4) |
| Children | 67% (98) | 55% (191) | 34% (34) | 55% (323) |
| Adolescents | 16% (23) | 10% (36) | 7% (7) | 11% (66) |
| Adults | 17% (25) | 34% (116) | 54% (54) | 33% (195) |
| Geriatric | 0% (0) | <1% (1) | 1% (1) | <1% (2) |
| Number responding | 146 | 346 | 98 | 590 |

individuals indicated that they did so under the supervision of a BCBA. It should be noted that in defining the work circumstances of these two certificates, the BACB has included the following statement for BCABAs: "It is strongly recommended that the BCABA practice under the supervision of a BCBA, and that those governmental entities regulating BCABAs require this supervision."

That only 65% of BCABAs surveyed reported that they provide services under some type of supervision is therefore a concern, although it is reassuring that 82% of these individuals are supervised by a BCBA. As the BACB continues to develop its ability to communicate with employers and other user communities, it will be important to clarify the relative capabilities and roles of these two certificates and to emphasize the need for BCABAs to work under some level of supervision of BCBAs.

## IMPORTANCE OF CONTENT AREAS

### Instructions for Rating Importance of Tasks

Because the job-analysis survey instrument addressed both BCBAs and BCABAs, there were two rating scales for each work activity. The first rating scale was for answers relating to BCABAs and the second rating scale was for answers relating to BCBAs.

The survey instructions for rating the importance of job tasks included the following excerpts, which should be examined in order to interpret rating data.

The purpose of this question is to determine how important this work activity is for the practice of Behavior Analysis at the two levels of certification. A work activity may be important for a variety of reasons. Some work activities may not be as important or may not fall within the scope of work or level of education and experience of the BCABA (Associate). Determining this is one of the important questions that this survey has been designed to answer.

Some things to consider include: 1) how frequently the activity is performed, 2) the potential for harm if the activity were not performed correctly, 3) whether you believe that this activity should be tested on the certification examinations, 4) work circumstances for BCBAs and BCABAs (Associates), and 5) the level of education and experience that is required for certification at each level.

Work Circumstances for BCABAs (Associates): An Associate Behavior Analyst typically works under the technical direction of a Behavior Analyst. The Associate conducts descriptive behavioral assessments and is able to interpret the results in accordance with behavior analytic conceptual systems and designs and oversees interventions in familiar cases (e.g., those encountered during their training) that are consistent with the dimensions of Applied Behavior Analysis. The Associate needs technical direction from a Behavior Analyst for unfamiliar situations. The Associate is able to teach others to carry out interventions once the Associate has demonstrated competency with the procedures involved. The Associate is able to assist a Behavior Analyst with the design and delivery of instruction in Behavior Analysis.

Work Circumstances for BCBAs: The Behavior Analyst oversees the work of Associate Behavior Analysts. A Behavior Analyst conducts descriptive and systematic (e.g., analogue) behavioral assessments and is able to interpret the results in accordance with behavior analytic conceptual systems and designs and oversees interventions that are consistent with the dimensions of Applied Behavior Analysis. The Behavior Analyst is able to effectively handle many un-

**TABLE 12**

**Total sample nonweighted mean importance ratings by content area**

| Content area | BCABA | BCBA | Difference | Rank difference |
|---|---|---|---|---|
| 1. Ethical considerations | 4.55 | 4.75 | 0.20 | 10 |
| 2. Definition and characteristics | 3.65 | 4.34 | 0.69 | 2 |
| 3. Principles, processes, and concepts | 4.21 | 4.66 | 0.45 | 9 |
| 4. Behavioral assessment | 4.06 | 4.74 | 0.68 | 3 |
| 5. Experimental evaluation of interventions | 3.56 | 4.53 | 0.97 | 1 |
| 6. Measurement of behavior | 4.28 | 4.74 | 0.46 | 8 |
| 7. Displaying and interpreting behavioral data | 3.68 | 4.35 | 0.67 | 4 |
| 8. Selecting intervention outcomes and strategies | 4.30 | 4.85 | 0.55 | 6 |
| 9. Behavior-change procedures | 4.13 | 4.61 | 0.48 | 7 |
| 10. Systems support | 4.09 | 4.74 | 0.65 | 5 |

familiar situations, but seeks the consultation of more experienced practitioners when appropriate. The Behavior Analyst teaches others to carry out interventions and designs and delivers instruction in Behavior Analysis.

In rating the importance of each activity, the possible choices are:

(1) NOT IMPORTANT—Ability to perform this activity may be useful but it is not required for competent practice of Behavior Analysis.

(2) SLIGHTLY IMPORTANT

(3) MODERATELY IMPORTANT—Ability to perform this work activity is required for competent practice of Behavior Analysis. However, other skills, knowledge or resources can compensate until this skill is learned on the job.

(4) VERY IMPORTANT

(5) CRITICALLY IMPORTANT—Ability to perform this work activity is absolutely necessary for the competent practice of Behavior Analysis. Lack of the ability to perform this activity would be a serious and potentially disqualifying limitation in the performance of Behavior Analysis.

*Survey Findings*

The primary focus of the job-analysis survey was to determine the level of importance assigned by respondents to each work activity (task) within each of the 10 content areas. The data provide an empirically based definition of applied behavior analysis, which acquires practical importance because the task standards tend to drive college- and university-based training program curricula through the BACB's system for approving course sequences. It is sometimes important to interpret findings in terms of differences among the three sampled cohorts (BCABAs, BCBAs, and ABA members).

The data in Table 12 suggest that respondents view each of the 10 content areas as relatively important, particularly for BCBAs. The range of mean rating values is both high and narrow for BCBAs (4.35 to 4.85). There is greater variation among the mean ratings for BCABAs, with three content areas (definition and characteristics, experimental analysis of interventions, and displaying and interpreting behavioral data) rated somewhat lower than other areas. Content Area 5 (experimental evaluation of interventions) was assigned the largest difference between BCABAs and BCBAs (almost a whole rating point), indicating that respondents felt that skills in this area were less important for BCABAs to master and use on the job. Given that BCABAs are presently required to take only 90 classroom hours of course work at the undergraduate level, it is reasonable to expect that respondents would identify some areas that they view as less important job skills for individuals holding a bachelor's degree compared to individuals taking 180 hours of course work at the graduate level. Nevertheless, all content areas were rated well above the midpoint on the 5-point scale for BCABAs. These values suggest that the respondents view the work activities within these

**TABLE 13**

**Importance ratings across content areas by subgroup**

| Content area | Importance for BCABAs | | | Importance for BCBAs | |
|---|---|---|---|---|---|
| | BCABA | BCBA | ABA | BCBA | ABA |
| 1 | 4.6 | 4.5 | 4.5 | 4.8 | 4.7 |
| 2 | 4.1 | 3.7 | 3.2 | 4.4 | 4.1 |
| 3 | 4.4 | 4.2 | 4.0 | 4.7 | 4.6 |
| 4 | 4.5 | 4.0 | 3.8 | 4.8 | 4.6 |
| 5 | 4.0 | 3.4 | 3.4 | 4.5 | 4.5 |
| 6 | 4.5 | 4.2 | 3.9 | 4.8 | 4.5 |
| 7 | 4.0 | 3.6 | 3.3 | 4.4 | 4.2 |
| 8 | 4.7 | 4.2 | 3.9 | 4.9 | 4.8 |
| 9 | 4.4 | 4.1 | 3.8 | 4.6 | 4.4 |
| 10 | 4.6 | 4.0 | 3.7 | 4.8 | 4.6 |
| M | 4.4 | 4.0 | 3.8 | 4.7 | 4.5 |

areas as at least a minimum set of competencies for applied behavior analysts at any level who will be offering services.

The data in Table 13 show the assignment of importance ratings for BCABAs and BCBAs separately for each of the three sampled groups. The ratings for BCABAs show that those who hold this certificate believe it is important for BCABAs to know material in all content areas at least as well or better than expected of them by those holding the BCBA certificate and the members of the ABA cohort. That our bachelor-level colleagues place such importance on behavior-analytic content and skills is an encouraging finding and would seem to support the BACB's revised course work standards, which will go into effect in 2005, requiring an increase from 90 to 135 hours of undergraduate course work. The BCBA and ABA cohorts rated the importance of the areas for BCBAs similarly.

The survey data also allow a comparison of importance ratings as assigned by individuals who identified themselves as having distinct areas of primary emphasis in their work as behavior analysts. Table 14 shows these data for six primary emphasis groups across each of the content areas. It is notable that there are remarkably small differences among the different groups. This finding suggests that there is widespread agreement on the core knowledge and skills that define the practice of behavior analysis. Individuals who work in varied settings and with populations having disparate

**TABLE 14**

**Mean importance ratings across content areas by primary emphasis groups**

| Primary emphasis | Content area | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | M |
| Behavior analysis | 4.7 | 4.0 | 4.4 | 4.4 | 4.0 | 4.5 | 4.0 | 4.6 | 4.4 | 4.4 | 4.4 |
| Behavior therapy | 4.7 | 4.0 | 4.4 | 4.3 | 4.0 | 4.3 | 3.7 | 4.5 | 4.2 | 4.3 | 4.3 |
| Education | 4.7 | 4.0 | 4.5 | 4.5 | 4.2 | 4.6 | 4.1 | 4.6 | 4.4 | 4.4 | 4.4 |
| OBM | 4.6 | 3.7 | 4.3 | 4.2 | 4.0 | 4.4 | 4.0 | 4.5 | 4.2 | 4.2 | 4.2 |
| PBS | 4.6 | 4.0 | 4.4 | 4.3 | 3.9 | 4.4 | 3.9 | 4.5 | 4.3 | 4.4 | 4.3 |
| Psychology | 4.6 | 4.0 | 4.4 | 4.3 | 4.1 | 4.4 | 3.9 | 4.4 | 4.2 | 4.3 | 4.3 |
| M | 4.6 | 4.0 | 4.4 | 4.3 | 4.0 | 4.4 | 4.0 | 4.5 | 4.3 | 4.4 | 4.3 |

## TABLE 15

### Tasks with low ratings for BCBAs and BCABAs

| Task | Task statements | Mean rating |
|------|-----------------|-------------|
| BCBAs | | |
| 2-2 | Explain determinism as it relates to behavior analysis | 3.92 |
| 7-3 | Use standard celeration charts | 3.30 |
| BCABAs | | |
| 2-2 | Explain determinism as it relates to behavior analysis | 3.25 |
| 2-4 | Distinguish among EAB, ABA, behavioral technologies | 3.37 |
| 2-7 | Interpret articles from the behavior-analytic literature | 3.58 |
| 3-18 | Define and provide examples of interverbals | 3.50 |
| 5-1 | Systematically manipulate independent variables to analyze their effects on treatment | |
| 5-1a | Use withdrawal designs | 3.58 |
| 5-1b | Use reversal designs | 3.60 |
| 5-1c | Use alternating treatments designs | 3.52 |
| 5-1d | Use changing criterion designs | 3.52 |
| 5-1e | Use multiple baseline designs | 3.61 |
| 5-3 | Conduct a component analysis | 3.47 |
| 5-4 | Conduct a parametric analysis | 3.23 |
| 7-3 | Use standard celeration charts | 2.70 |
| 7-4 | Use a cumulative record to display data | 3.29 |
| 9-21 | Use stimulus equivalence procedures | 3.52 |
| 9-22 | Plan for behavioral contrast effects | 3.58 |
| 9-23 | Use behavioral momentum | 3.89 |
| 9-24 | Use matching law and recognize factors influencing choice | 3.51 |
| 9-25 | Use language acquisition programs that employ Skinner's analysis of verbal behavior | 3.54 |

*Note.* Task 5-1 was not directly rated by respondents because it has been broken down into Subtasks 5-1a, 5-1b, 5-1c, 5-1d, and 5-1e.

characteristics seem to share a high level of agreement on the content of the 10 areas. The consensus, evident in spite of self-identified special interests, is reassuring. That the technology of applied behavior analysis and its foundation in the larger discipline are relatively well defined within this community means that applied behavior-analytic practice can be described with confidence to those who purchase the technology. This agreement also means that those who, out of ignorance or in pursuing other agendas, mischaracterize applied behavior-analytic practice can be confronted with this evidence.

The agreement indicated in Table 14 does not mean that each task met with uniform reactions across respondents, particularly when distinctions were made between expectations for the two levels of certification. Table 15 shows that two tasks received mean ratings below 4.0 for BCBAs and a larger number received mean ratings below 4.0 for BCABAs. Note, however, that all but one task (Task 7-3 for BCABAs) had mean ratings above 3.0, which is labeled in the instructions as "moderately important" and is described as the "Ability to perform this work activity is required for competent practice of behavior analysis. However, other skills, knowledge or resources can compensate until this skills is learned on the job." The table shows that the tasks receiving mean ratings below 4.0 for BCABAs generally involved topics that might be less likely to be covered in depth in typical undergraduate courses in behavior analysis. These topics include interpreting the literature, using experimental designs to analyze treatment effects, and appreciating the utility of stimulus equivalence, behavioral contrast, be-

havioral momentum, and the matching law. Although some might wish that all individuals defined as behavior analysts by either credential would understand these topics, it may help to recall that the bachelor-level certificant is expected to play a supporting role in relation to BCBAs. The following description is taken from the BCBA Web site:

The BCABA conducts descriptive behavioral assessments and is able to interpret the results and design ethical and effective behavior analytic interventions for clients. The BCABA designs and oversees interventions in familiar cases (e.g., similar to those encountered during their training) that are consistent with the dimensions of applied behavior analysis. The BCABA obtains technical direction from a BCBA for unfamiliar situations. The BCABA is able to teach others to carry out interventions once the BCABA has demonstrated competency with the procedures involved under the direct supervision of a BCBA. The BCABA may assist a BCBA with the design and delivery of introductory level instruction in behavior analysis. It is strongly recommended that the BCABA practice under the supervision of a BCBA, and that those governmental entities regulating BCABAs require this supervision.

Given the definition of a 3 rating provided in survey instructions, as well as generally accepted practices in the test-construction industry, the BACB elected to retain all task standards that had ratings above 2.75. All tasks met this standard for BCBAs, and only one task fell below this criterion for BCABAs (Task 7-3, involving the ability to use the Standard Celeration Chart; this was also the lowest rated task for BCBAs).

## ANALYSIS AND IMPLEMENTATION

A meeting was held on May 24, 2002, between the BACB and the Florida Department of Children and Families (hereafter referred to as the Review Committee) for the purposes of reviewing the BACB draft Job-Analysis Report and making recommendations to the BACB concerning possible actions following the job-analysis survey. The review committee discussed the survey findings and changes to the

eligibility standards and Task List for the BCBA and the BCABA and made recommendations for establishing test specifications for the BCBA and BCABA examinations. (For a listing of the Review Committee members, see Appendix C.)

In agreement with the BACB, the committee found that the results of the job-analysis survey supported retaining all of the task items on the job-analysis survey draft Task List for the BCBA and all of the task items on the job-analysis survey draft Task List for the BCABA except one (see Appendix D).

The Review Committee considered the recommendations of the 2001 Los Angeles expert panel, analyzed the results of the 2002 pilot test, accepted the recommendations of the BACB Standards Committee to increase the eligibility for examination course work hour requirements by 45 contact hours for both the BCBA and BCABA certificates, and directed the Standards Committee to recommend to the BACB Board of Directors the allocation of content across task areas. (For the allocation of contact hours across content areas approved by the BACB Board of Directors, see Appendixes E and F.) The revised BACB course work requirements and the Third Edition Task List will go into effect with the BACB Fall 2005 examination administrations. This delay is intended and required to allow training programs to adapt their curricula to the revised requirements and graduate students under the new curricula.

Following the approval of the Third Edition Task List, the BACB assumed full responsibility for further examination development. During 2003, the BACB developed Knowledge, Skills, and Ability (KSA) statements that further delineate and specify task content within the Third Edition Task List Content Areas by means of an expert panel established by the BACB for that purpose. Panel participants were assigned between one and five specific tasks for which they were responsible for developing KSA statements. Coor-

dinating editors reviewed and edited all
of the new KSAs within a content area
or areas for accuracy and continuity.
(For a listing of KSA Development
Panel participants, see Appendix G.)

The BACB is continuing the process
of examination development by estab-
lishing Item Writing Panels to con-
struct test items for the new Third Edi-
tion Task List item bank, although
many of the items in the existing item
bank will also remain usable. In addi-
tion, the BACB is using information
from this survey to determine param-
eters such as the number of items per
area of content in the examination, the
nature and number of the individual
test items, and other test specification
items for both the BCBA and BCABA
examinations.

## GENERAL ISSUES

The job-analysis process, including
both the early involvement of experts
that resulted in the survey document
and the survey findings themselves, re-
veals a picture of the field, particularly
the area of applied behavior analysis,
with some interesting features. Perhaps
one of the more encouraging observa-
tions is that applied behavior analysis,
at least as defined through the certifi-
cation program, is not static. Among
the revisions to the task list made by
members of the Los Angeles expert
panel were inclusions of new topics not
previously covered, including behav-
ioral momentum, stimulus equivalence,
and the matching law. Furthermore,
this panel made substantial changes in
the organization of the existing task
list, condensing and reducing the con-
tent areas from 16 to 10 and rearrang-
ing much of the content. The total
number of tasks increased slightly.

The possibility that the certification
process might inhibit change in the
field of applied behavior analysis by
promulgating unchanging certification
content standards, although under-
standable, does not appear to be sup-
ported by the evidence. The involve-
ment of diverse leaders in the field on
the Los Angeles expert panel and the
pilot test panel resulted in inclusion of
some new content and considerable re-
thinking of existing content. Further-
more, the survey data show that the
views of these leaders were well ac-
cepted by respondents.

A second observation concerns the
consequences of promulgating the task
standards resulting from this job-anal-
ysis process. These standards define
the content on which applicants for
certification will be tested. As such,
they constitute the material applicants
will study, and the development of
supporting materials (e.g., exam prep-
aration materials and courses, practice
exams) will naturally focus on this
content. More important for the field,
they represent the material that under-
graduate and graduate programs must
teach if they wish their graduates to
pass the certification exam. Including
this content in courses means that even
students who are not interested in cer-
tification or practitioner careers will re-
ceive training in these areas. Those ac-
ademic programs that apply for ap-
proval of their course sequences are re-
quired to identify how their courses
cover each content area, and some fac-
ulty plan and document their curricula
with this level of specificity. Further-
more, the BACB will soon begin pro-
viding limited feedback to programs
with approved course sequences re-
garding the collective examination per-
formance of their graduates, which will
allow program faculty to improve the
effectiveness of their offerings in rela-
tion to the content areas.

In addition to academic courses and
programs, there is a substantial amount
of training in various aspects of the
task list that is offered in nonacademic
venues for purposes other than prepar-
ing individuals to take the examina-
tions. Workshops, short courses, and
other forms of training are available in
the context of on-the-job training and
continuing education. The BACB re-
quires specified amounts of continuing
education on a 3-year reporting cycle
to maintain one's certificate; this is a

particularly important aspect of the nonacademic training market. There are six categories of continuing education experiences that may be accumulated (including retaking the exam), only one of which (Type 2) requires some type of approval by the BACB. Continuing education requirements do not specify content in relation to task standards.

In sum, an important consequence of the certification process is to drive undergraduate and graduate training curricula for those programs that wish to attract students interested in earning one of the BACB credentials. Of course, programs that do not wish to offer this focus can certainly ignore these standards, but the continuing growth of BCAB-approved course sequences makes it clear that the job-analysis process, in tandem with the certification program, constitutes a major influence on academic and nonacademic training in behavior analysis.

We believe this state of affairs to be quite encouraging. The certification process constitutes the only mechanism presently exercised within the field by which a broad sample of behavior analysts can influence academic curricula widely used in the field. Whereas it is certainly the case that this sample over- or underrepresents different interests in our diverse discipline, the job-analysis process is a consistent and broadly based means of bringing the views of those sampled to bear on the development of standards for credentialing applied behavior analysts and on the curricula in which they are trained.

This is not the only such method by which the field can influence its training curricula and overall direction. ABA has twice initiated an effort to engage the field in a program of self-study that had the promise to encourage systematic evaluation and change, although this effort has yet to achieve a broadly useful outcome. It is certainly not the case that the job-analysis process provides the basis for considering a comprehensive agenda for developing the entire field. Instead, it fo-
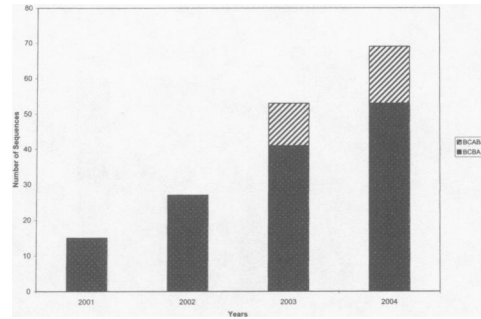


Figure 1.  Cumulative number of BACB-approved course sequences.

cuses primarily on practitioner training and offers little guidance for improvements in research literatures, outreach to other areas of psychology, and so forth. The field still needs a systematic and comprehensive self-study process conducted on some schedule.

A third observation concerns another indirect effect of establishing a credential-based definition of applied behavior analysts and thereby some parameters for academic training curricula. The natural contingencies in higher education encourage transformations of existing academic programs and the formation of new programs that will meet the demands of students and the marketplace for these professional credentials (e.g., Bailey & Berber, 2001: Glenn, 2001; Morse & Madden, 2001; Zane & Jacobson, 2001). Figure 1 shows the number of course sequences that have been approved by the BACB since the initiation of this approval process. In only 3 years, 69 university programs have received BACB approval of their course sequences. Of these 69 programs, 47 are on-site graduate programs approved at the BCBA level, 15 are on-site programs approved at the BCABA level, and 7 are distance-learning programs. Seven of the programs are offered in universities outside the United States. An examination of the list of colleges and universities that offer approved course sequences (see www.BACB. com) shows that some of the graduate programs were well-established behav-
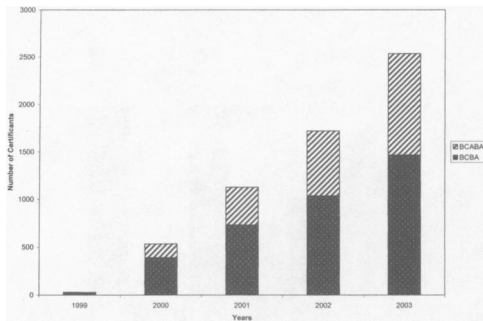
Figure 2.   Cumulative number of BACB certificants.

ior-analysis training programs before the national certification effort began. However, many of the programs have used certification as a basis for transforming more limited behavior-analysis courses into an organized, more comprehensive, and formal program. Some programs have been not so much transformed as largely created by faculty, chairs, and deans who are interested in serving the demand represented by students and employers.

This growth in university training programs has sometimes involved creating new positions for faculty trained in behavior analysis and inviting doctoral-level behavior analysts who work in the community to serve in an adjunct capacity (e.g., Zane & Jacobson, 2001). The programs with approved course sequences that offer practicum training intended to meet the BACB's experience requirement have also developed their relationships with local provider agencies. If the number of approved course sequences continues to grow, applications might also be expected to continue accelerating as well.

Figure 2 shows the cumulative number of certificants, which totaled over 2,500 at the end of 2003. An informal extrapolation of these data, assuming continuing growth in approved course sequences, suggests that this number could double in just a few more years.

The relative proportion of BCABAs and BCBAs merits comment. Figure 2 shows that the proportion of certificants who are BCABAs is increasing,

with BCABAs now representing over 40% of certificants. This trend may be misleading, however, due to two anomalous circumstances originating with the BACB's agreement with Florida. First, the agreement allowed qualified Florida-certified individuals to transfer into the BACB, and many of these individuals transferred at the BCABA level. Second, the agreement allowed continuation of a small number of Florida-approved nonuniversity courses, which attract predominantly undergraduate students. Allowance for these courses is now being phased out. As a result, it is reasonable to expect that the number of new BCABAs will drop in future years and the relative proportions of the two certificates will change.

Nevertheless, applications for the BCABA certificate are a welcome phenomenon. It might be argued that behavior analysis has never done especially well at attracting undergraduate students. Were the field more successful in doing so, numbers of applications to graduate programs in behavior analysis would likely be much higher than they are today. The BCABA credential may attract undergraduate students because it provides a clear, baccalaureate-level career path for the psychology major—something notably lacking in undergraduate psychology. Whatever the reason for this attraction, the outcome helps to accommodate the greater demand in the marketplace for individuals with bachelor's rather than master's degrees.

In acknowledging the more limited course work and experience requirements for BCABAs, the BACB defines the role of the BCABA, in part, as assisting and working under the supervision of BCBAs. However, as already noted, the survey results show that BCABAs seem to be interested in mastering a comprehensive set of task standards, and it is likely that a portion of BCABAs will eventually earn a master's degree and the BCBA certificate. For some BCABAs then, the certificate may simply be a steppingstone that al-

lows them to evaluate their commitment to this career, gain experience, and prepare for graduate study. Whether BCABAs build careers at the bachelor's level or use the certificate to prepare for further study, these individuals should be seen as a valuable resource for the field.

We view each new certificant, whether BCABA or BCBA, as representing a sphere of influence on behalf of behavior analysis. Whatever their job or circumstance, BACB certificants will represent the field of behavior analysis well. They will increase the number of people who have contact with a behavior analyst in some way and will find myriad ways of creating increased demand and support for our field. In many states, even a modest number of certificants working in developmental disabilities settings can have a substantial effect on the delivery of services.

Although it is natural to think of their impact on consumers and those who live and work with them, an equally important kind of impact might be described as more political in nature. The involvement of certificants in meetings, on boards and task forces, in organizations, and in administrative capacities can have powerful effects on how behavior analysis is perceived, accommodated, and supported at the state level (Johnston & Shook, 1988).

The job analysis reported here helps define an increased level of maturity of the certification program. The early stage of development involving formulation of basic policies and procedures is now past. Perhaps symbolic of the end of this founding phase is that the 1999 agreement with the Florida Department of Families and Children that allowed the BACB to transform a state certification program into an international program has recently been satisfactorily concluded. In December 2003, the BACB executed two letters of agreement with the Florida Department of Children and Families. The first letter of agreement fully and successfully terminated the 1999 agree-

ment between the BACB and Florida because the "terms of the agreement have been substantially completed" by the BACB well ahead of schedule. The current letter of agreement effectively gives the BACB sole ownership and transfers the possession of all item banks and all other examination materials from Florida to the BACB. The second letter of agreement provides final transfer of all remaining Department of Children and Families certificants to the BACB and effectively terminates the Florida Behavior Analysis Certification Program. These former Florida certificants will retain their designations (e.g., Florida Certified Behavior Analyst); however, they will be responsible for adhering to BACB professional standards and other policies.

The BACB is now a fully independent and well-developed credentialing body (Shook, in press). It is financially healthy and able to invest in future development. The focus of the next phase of the certification effort might be described as primarily involving the impact of certification at state, national, and international levels. Certificants are increasingly facilitating regulatory and legal recognition of this credential to augment its usefulness for both consumers and the field. The effects of these activities will be to create further demand for certificants, those who train them, and those who create the basic and applied research base for the technology. This involves all of us.

## REFERENCES

American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Psychological Association.

Bailey, J., & Berber, E. (2001, May). Reengineering a master's program in ABA: Using certification guidelines to package and deliver the goods. In J. Johnston (Chair), *Emerging effects of certification: Academic reactions to training opportunities*. Symposium conducted at the annual meeting of the Association for Behavior Analysis, New Orleans.

Browning, A. H., Bugbee, A. C., Jr., & Mullins,

M. (Eds.). (1996). *Certification: A NOCA handbook.* Washington, DC: National Organization for Competency Assurance.

Glenn, S. (2001, May). Taking the university to the 21st century learner. In J. Johnston (Chair), *Emerging effects of certification: Academic reactions to training opportunities.* Symposium conducted at the annual meeting of the Association for Behavior Analysis, New Orleans.

Johnston, J. M., & Shook, G. (1988). Developing behavior analysis at the state level. *The Behavior Analyst, 10,* 199–233.

Morse, L., & Madden, G. (2001, May). National certification of behavior analysts: An agent for significant change in our undergraduate and graduate programs in psychology. In J. Johnston (Chair), *Emerging effects of certification: Academic reactions to training opportunities.* Symposium conducted at the annual meeting of the Association for Behavior Analysis, New Orleans.

Schmitt, K., & Shimberg, B. (1996). *Demystifying occupational and professional regulation: Answers to questions you may have been afraid to ask.* Lexington, KY: Council on Licensure, Enforcement and Regulation.

Shook, G. L. (in press). An examination of the integrity and future of the Behavior Analyst Certification Board credentials. *Behavior Modification.*

United States. Equal Employment Opportunity Commission. (1978). *United States Equal Employment Opportunity Commission guidelines on employment testing procedures.* Washington, DC: Author.

Zane, T., & Jacobson, J. (2001, May). The process of establishing certification training at a small urban college. In J. Johnston (Chair), *Emerging effects of certification: Academic reactions to training opportunities.* Symposium conducted at the annual meeting of the Association for Behavior Analysis, New Orleans.

## APPENDIX A

*Los Angeles Expert Panel*

Sigrid Glenn, PhD, BCBA, University of North Texas

Gina Green, PhD, BCBA, New England Center for Children, Massachusetts

Linda Hayes, PhD, University of Nevada, Reno

Michael Hemingway, MA, BCBA, Florida Department of Children and Families

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James Johnston, PhD, BCBA, Auburn University, Alabama

John Lutzker, PhD, BCBA, Centers for Disease Control, Georgia

Roy Mayer, PhD, BCBA, California State University, Los Angeles

Siri Ming, MA, BCBA, Behavior Analysts, Inc., California

Carol Pilgrim, PhD, University of North Carolina–Wilmington

Gerald Shook, PhD, BCBA, Behavior Analyst Certification Board

Michael Stoutimore, PhD, BCBA, Florida Department of Children and Families

Mark Sundberg, PhD, BCBA, Sundberg and Associates, California

Vicci Tucci, MA, BCBA, Tucci Educational Services, California

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## APPENDIX D
*Third Edition Task List*

| CONTENT AREA 1: ETHICAL CONSIDERATIONS | |
|---|---|
| **#** | **TASK** |
| 1-1 | Solicit or otherwise influence clients only through the use of truthful and accurate representations of intervention efficacy and one's professional competence in applied behavior analysis. |
| 1-2 | Practice within one's limits of professional competence in applied behavior analysis, and obtain consultation, supervision, training, or make referrals as necessary. |
| 1-3 | Maintain competence by engaging in ongoing professional development activities. |
| 1-4 | Obtain informed consent within applicable legal and ethical standards. |
| 1-5 | Assist the client with identifying life style or systems change goals and targets for behavior change that are consistent with: |
| a. | the applied dimension of applied behavior analysis (Baer, Wolf, & Risley 1968). |
| b. | applicable laws. |
| c. | the ethical and professional standards of the profession of applied behavior analysis. |
| 1-6 | Initiate, continue, modify, or discontinue behavior analysis services only when the risk-benefit ratio of doing so is lower than the risk-benefit ratio for taking alternative actions. |
| 1-7 | Identify and reconcile contingencies that compromise the practitioner - client covenant, including relationships among the practitioner, the client and other parties |
| 1-8 | Use the most effective assessment and behavior change procedures within applicable ethical standards taking into consideration the guideline of minimal intrusiveness of the procedure to the client. |
| 1-9 | Protect confidentiality. |
| 1-10 | Truthfully and accurately represent one's contributions and those of others to the practice, discipline and profession of applied behavior analysis. |
| 1-11 | Ensure that the dignity, health and safety of one's client are fully protected at all times. |
| 1-12 | Give preference to assessment and intervention methods that have been scientifically validated, and use scientific methods to evaluate those that have not yet been scientifically validated. |

| CONTENT AREA 2: DEFINITION AND CHARACTERISTICS | |
|---|---|
| **#** | **TASK** |
| 2-1 | Explain and behave in accordance with the philosophical assumptions of behavior analysis, such as the lawfulness of behavior, empiricism, experimental analysis, and parsimony. |
| 2-2 | Explain determinism as it relates to behavior analysis. |
| 2-3 | Distinguish between mentalistic and environmental explanations of behavior. |
| 2-4 | Distinguish among the experimental analysis of behavior, applied behavior analysis, and behavioral technologies. |
| 2-5 | Describe and explain behavior, including private events, in behavior analytic (non-mentalistic) terms. |
| 2-6 | Use the dimensions of applied behavior analysis (Baer, Wolf, & Risley 1968) for evaluating interventions to determine if they are behavior analytic. |
| 2-7 | Interpret articles from the behavior analytic literature. |

| CONTENT AREA 3: PRINCIPLES, PROCESSES AND CONCEPTS | |
|---|---|
| # | *TASK* |
| 3-1 | Define and provide examples of behavior/response/response class. |
| 3-2 | Define and provide examples of stimulus and stimulus class. |
| 3-3 | Define and provide examples of positive and negative reinforcement. |
| 3-4 | Define and provide examples of conditioned and unconditioned reinforcement. |
| 3-5 | Define and provide examples of positive and negative punishment. |
| 3-6 | Define and provide examples of conditioned and unconditioned punishment. |
| 3-7 | Define and provide examples of stimulus control. |
| 3-8 | Define and provide examples of establishing operations. |
| 3-9 | Define and provide examples of behavioral contingencies. |
| 3-10 | Define and provide examples of functional relations. |
| 3-11 | Define and provide examples of extinction. |
| 3-12 | Define and provide examples of generalization and discrimination. |
| 3-13 | Describe and provide examples of the respondent conditioning paradigm. |
| 3-14 | Describe and provide examples of the operant conditioning paradigm. |
| 3-15 | Define and provide examples of echoics and imitation. |
| 3-16 | Define and provide examples of mands. |
| 3-17 | Define and provide examples of tacts. |
| 3-18 | Define and provide examples of intraverbals. |
| 3-19 | Define and provide examples of contingency-shaped and rule governed behavior and distinguish between examples of each. |

| CONTENT AREA 4: BEHAVIORAL ASSESSMENT | |
|---|---|
| # | TASK |
| 4-1 | State the primary characteristics of and rationale for conducting a descriptive assessment. |
| 4-2 | Gather descriptive data. |
| a. | Select various methods. |
| b. | Use various methods. |
| 4-3 | Organize and interpret descriptive data. |
| a. | Select various methods. |
| b. | Use various methods. |
| 4-4 | State the primary characteristics of and rationale for conducting a functional analysis as a form of assessment. |
| 4-5 | Conduct functional analyses. |
| a. | Select various methods. |
| b. | Use various methods. |
| 4-6 | Organize and interpret functional analysis data. |
| a. | Select various methods. |
| b. | Use various methods. |

| # | TASK |
|---|---|
| **CONTENT AREA 5: EXPERIMENTAL EVALUATION OF INTERVENTIONS** |

| # | TASK |
|---|---|
| 5-1 | Systematically manipulate independent variables to analyze their effects on treatment. |
| a. | Use withdrawal designs. |
| b. | Use reversal designs. |
| c. | Use alternating treatments (i.e., multi-element, simultaneous treatment, multiple or concurrent schedule) designs. |
| d. | Use changing criterion design. |
| e. | Use multiple baseline designs. |
| 5-2 | Identify and address practical and ethical considerations in using various experimental designs. |
| 5-3 | Conduct a component analysis (i.e., determining effective component(s) of an intervention package). |
| 5-4 | Conduct a parametric analysis (i.e., determining effective parametric values of consequences, such as duration or magnitude). |

**CONTENT AREA 6: MEASUREMENT OF BEHAVIOR**

| # | TASK |
|---|---|
| 6-1 | Identify the measurable dimensions of behavior (e.g., rate, duration, latency, or inter-response times). |
| 6-2 | Define behavior in observable and measurable terms. |
| 6-3 | State the advantages and disadvantages of using continuous measurement procedures and sampling techniques (e.g., partial- and whole-interval recording, momentary time sampling). |
| 6-4 | Select the appropriate measurement procedure given the dimensions of the behavior and the logistics of observing and recording. |
| 6-5 | Select a schedule of observation and recording periods. |
| 6-6 | Use frequency (i.e., count). |
| 6-7 | Use rate (i.e., count per unit time). |
| 6-8 | Use duration. |
| 6-9 | Use latency. |
| 6-10 | Use inter-response time (IRT). |
| 6-11 | Use percent of occurrence. |
| 6-12 | Use trials to criterion. |
| 6-13 | Use interval recording methods. |
| 6-14 | Use various methods of evaluating the outcomes of measurement procedures, such as inter-observer agreement, accuracy, and reliability. |

**CONTENT AREA 7: DISPLAYING AND INTERPRETING BEHAVIORAL DATA**

| # | TASK |
|---|---|
| 7-1 | Select a data display that effectively communicates quantitative relations. |
| 7-2 | Use equal-interval graphs. |
| 7-3 | Use Standard Celeration Charts (for BCBA only – excluded for BCABA). |
| 7-4 | Use a cumulative record to display data. |
| 7-5 | Use data displays that highlight patterns of behavior (e.g., scatter plot). |
| 7-6 | Interpret and base decision-making on data displayed in various formats. |

| # | CONTENT AREA 8: SELECTING INTERVENTION OUTCOMES AND STRATEGIES |
|---|---|
| | TASK |
| 8-1 | Conduct a task analysis. |
| 8-2 | Make recommendations to the client regarding target outcomes based upon such factors as: client preferences, task analysis, current repertoires, supporting environments, constraints, social validity, assessment results and best available scientific evidence. |
| 8-3 | State target intervention outcomes in observable and measurable terms. |
| 8-4 | Make recommendations to the client regarding intervention strategies based on such factors as: client preferences, task analysis, current repertoires, supporting environments, constraints, social validity, assessment results and best available scientific evidence. |
| 8-5 | Make recommendations to the client regarding behaviors that must be established, strengthened, and/or weakened to attain the stated intervention outcomes. |
| 8-6 | When a behavior is to be weakened, select an acceptable alternative behavior to be established or strengthened. |
| 8-7 | Determine and make environmental changes that reduce the need for behavior analysis services. |
| 8-8 | Identify the contingencies governing the behavior of those responsible for carrying out behavior change procedures and design interventions accordingly. |

| # | CONTENT AREA 9: BEHAVIOR CHANGE PROCEDURES |
|---|---|
| | TASK |
| 9-1 | Use antecedent-based interventions, such as: contextual or ecological variables, establishing operations, and discriminative stimuli. |
| 9-2 | Use positive and negative reinforcement: |
| a. | Identify and use reinforcers. |
| b. | Use appropriate parameters and schedules of reinforcement. |
| c. | Use response-deprivation procedures (e.g., Premack principle). |
| d. | State and plan for the possible unwanted effects of the use of reinforcement. |
| 9-3 | Use positive and negative punishment: |
| a. | Identify and use punishers. |
| b. | Use appropriate parameters and schedules of punishment. |
| c. | State and plan for the possible unwanted effects of the use of punishment. |
| 9-4 | Use extinction. |
| a. | Identify possible reinforcers maintaining behavior and use extinction. |
| b. | State and plan for the possible unwanted effects of the use of extinction. |
| 9-5 | Use response-independent (time-based) schedules of reinforcement. |
| 9-6 | Use differential reinforcement. |
| 9-7 | Use discrimination training procedures. |
| 9-8 | Use prompt and prompt fading. |
| 9-9 | Use instructions and rules. |
| 9-10 | Use modeling and imitation. |
| 9-11 | Use shaping. |
| 9-12 | Use chaining. |

| 9-13 | Use incidental teaching techniques. |
|------|-------------------------------------|
| 9-14 | Use Direct Instruction. |
| 9-15 | Use precision teaching. |
| 9-16 | Use personalized system of instruction (PSI). |
| 9-17 | Use discrete trials. |
| 9-18 | Use contingency contracting (e.g., behavioral contracts). |
| 9-19 | Use token economy procedures, including levels systems. |
| 9-20 | Use independent, interdependent and dependent group contingencies. |
| 9-21 | Use stimulus equivalence procedures. |
| 9-22 | Plan for behavioral contrast effects. |
| 9-23 | Use behavioral momentum. |
| 9-24 | Use the matching law and recognize factors influencing choice. |
| 9-25 | Use language acquisition programs that employ Skinner's analysis of verbal behavior (i.e., echoics, mands, tacts, intraverbals). |
| 9-26 | Use language acquisition/communication training procedures. |
| 9-27 | Use self-management strategies. |
| 9-28 | Use behavior change procedures to promote stimulus and response generalization. |
| 9-29 | Use behavior change procedures to promote maintenance. |

| CONTENT AREA 10: SYSTEMS SUPPORT | |
|------|------|
| **#** | **TASK** |
| 10-1 | Use competency-based training for persons who are responsible for carrying out behavioral assessment and behavior change procedures. |
| 10-2 | Use effective performance monitoring and reinforcement systems. |
| 10-3 | Design and use systems for monitoring procedural integrity. |
| 10-4 | Establish support for behavior analysis services from persons directly and indirectly involved with these services. |
| 10-5 | Secure the support of others to maintain the clients' behavioral repertoires in their natural settings. |
| 10-6 | Provide behavior analysis services in collaboration with others who support and/or provide services to one's clients. |

## APPENDIX E

### Contact hour allocation per content area

| BCABA content area | BCABA hours |
|---|---|
| 1. Ethical considerations | 10 |
| 2. Definition and characteristics and | |
| 3. Principles, processes, and concepts | 40 |
| 4. Behavioral assessment and | |
| 8. Selecting intervention outcomes and strategies | 25 |
| 5. Experimental evaluation of interventions, | |
| 6. Measurement of behavior and | |
| 7. Displaying and interpreting behavioral data | 20 |
| 9. Behavior-change procedures and | |
| 10. Systems support | 40 |
| Total | 135 |

## APPENDIX F

### Contact hour allocation per content area

| BCBA content area | BCBA hours |
|---|---|
| 1. Ethical considerations | 15 |
| 2. Definition and characteristics and | |
| 3. Principles, processes, and concepts | 45 |
| 4. Behavioral assessment and | |
| 8. Selecting intervention outcomes and strategies | 35 |
| 5. Experimental evaluation of interventions | 20 |
| 6. Measurement of behavior and | |
| 7. Displaying and interpreting behavioral data | 20 |
| 9. Behavior-change procedures and | |
| 10. Systems support | 45 |
| 11. Discretionary: may be used within any one or more of the 10 content areas above or for any applications of behavior analysis[a] | 45 |
| Total | 225 |

[a] For example, this could be used for behavior-analytic applications in topic areas such as autism, organizational behavior management, behavioral pharmacology, and so on, as long as the coursework contact hours that are listed are behavior-analysis applications (not including behavior therapy).

## APPENDIX G

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