The Autism Screening Instrument for Educational Planning, Second Edition (ASIEP-2) is an assessment consisting of five separate subtests. Each subtest is designed to assist in one or more of the following areas: screening, diagnosis, placement, program planning, and progress monitoring. The Autism Behavior Checklist, Sample of Vocal Behavior, and Interaction Assessment are listed as screening and diagnostic scales; Educational Assessment and Prognosis of Learning Rate may be used in conjunction with the diagnostic tests as part of a complete intervention-planning battery. The Autism Behavior Checklist is designed for use with any individual who may have autism, whereas the other subtests are appropriate for individuals functioning at a language and social age of between 3 and 49 months.

**Subtests**

The Autism Behavior Checklist (ABC) consists of 57 differentially weighted behavior statements grouped into five symptom areas: sensory, relating, body and object use, language, and social/self-help. The rater (a professional educator or parent) circles the number (weight) that most accurately describes the student or client with respect to a given behavior statement.

The Sample of Vocal Behavior (SVB) is used to evaluate expressive speech at the preverbal and emerging language levels. The authors recommend that two people share
responsibility for conducting this subtest—one to elicit utterances and one to make a verbatim recording. The subtest lasts 30 minutes or until 50 vocalizations are recorded.

The Interaction Assessment (IA) uses a ten-second time-sampling procedure under three conditions (active modeling, passive/no initiation, direct cues), each of which lasts four minutes. Student behaviors are categorized as interactions, independent play, no response, or negative aggressive. Two adults (an observer and an interacting adult) are needed for this subtest, which measures spontaneous social reactions and the responses to requests.

The Educational Assessment (EA) probes the student's functioning level in five areas: in-seat behavior, receptive language, expressive language, body concept, and speech imitation. All subparts except in-seat behavior have 12 items. The assessor presents various materials (such as toys, foods, and blocks) and gives cues to the student to elicit certain responses. The EA probes the individual's adaptive-language concepts and requires that the child have some entry-level behaviors (such as staying seated and looking at objects). The authors state also that "an individual must have no disruptive behaviors that are incompatible with test taking" (Krug, Arick, & Almond, 1993, p. 5). The EA takes about 20 minutes and is meant to be useful in intervention planning.

The Progress of Learning Rate (PLR) subtest is used to examine an individual's rate of learning by training the individual on a discrete trial, direct-instruction task, using a differential reinforcement strategy. The learning task on which the student is trained—placing a chip on a tray—consists of three phases: pretraining, random presentation of objects (black-circle chip, white-circle chip, white-square chip), and posttesting for shape
and color discriminations. Optional training steps that vary the positioning of the objects may be used.

**Scoring Procedures and Scores**

The ABC is scored by summing the weighted values first within symptom areas and then across all areas for a total score. Raw scores are plotted on summary profiles that show the area means for the standardization sample. The total score mean of the total sample on the ABC is 77 (standard deviation = 20), and the authors suggest a cutoff score of one-half standard deviation below this point (67) as indicating a high probability of autism.

The SVB appears rather complicated to administer and score. The author's suggestion of tape-recording each subtest should be followed. Each of the nine possible speech characteristics is summed individually, and the total score is calculated as the sum of four areas: repetitive, noncommunicative, unintelligible, and babbling. This total score is also called the "autistic speech characteristics" score. All scores are plotted on a summary profile. A language-age equivalency score is obtained by first summing some of the characteristics. Percentile scores are available in the IA profile for the total autistic speech characteristics only.

The IA yields raw scores in four areas: interaction, independent play, no response, and negative aggressive. These are plotted on a summary profile that shows mean performance levels of an autistic and a nonautistic subgroup. Raw scores are converted to percentiles using one of two charts defining the two groups by ABC total score, language age, and chronological age. An autistic social score is computed by following a formula
on the record form. Care must be taken in using IA scores because two areas are positively oriented (interaction and independent play) and two are negatively oriented (no response and negative aggressive).

The EA is summarized by raw scores in five areas: in-seat, receptive language, expressive language, body concept, and speech imitation. The total score is the sum across these areas. Each raw score is plotted on a summary profile and can be converted to percentiles for either subgroup. The total raw score is converted to percentiles for the IA profile.

The PLR raw scores (number of trials to criterion) for each step of the subtest are translated to percentiles, according to the autistic–nonautistic breakdown. The raw score from the first random-position task is used on the IA profile and is converted to a percentile.

**Norms**

**Autism Behavior Checklist** The ABC was normed on three samples of individuals. Sample 1 consisted of persons selected by members of the American Association for the Education of the Severely/Profoundly Handicapped, "teachers of trainable mentally retarded children throughout Oregon, and attenders of several conference presentations in the western United States and Canada" (Krug, Arick, & Almond, 1993, pp. 41–42). Although 3,000 ABCs were distributed, Sample 1 consisted of just 1,049 individuals ranging in age from 18 months to 35 years. Reported diagnoses of the total sample were 172 autistic, 423 severely mentally retarded, 254 emotionally disturbed, 100 deaf–blind,
and 100 nondisabled. No other demographic information on these persons is provided, except that the male-to-female ratio across all ages was 2.5 to 1.

Sample 2 consisted of 62 individuals ages 3 to 23 years, all of whom had a diagnosis of autism. The individuals were selected by professionals throughout the United States and Canada. Sample 3 consisted of 953 adults ages 21 to 68 years. Ninety-five percent of these individuals were diagnosed with severe mental retardation. It is not clear how these individuals were selected. No further information about Samples 2 and 3 is presented in the manual.

Given the limitations surrounding these low-incidence populations, the ABC norm samples may be somewhat representative of the autistic, deaf–blind, and severe mental-retardation groups. However, the remaining groups are inadequately sampled. Because very gross age breakdowns are given (such as 21–68 years for Sample 3), and because no other descriptions are provided, educators must be very cautious in making interpretations based on the ABC standardization.

Sample of Vocal Behavior  For the SVB, 81 examiners collected data on 157 subjects ages 2 years, 4 months to 20 years; 61 of these persons had autism, and 96 had severe disabilities without autism. Forty of these individuals (24 with autism, 16 without autism) were selected for subgroup analysis to define representative summary profiles on the SVB. Preschool and school-age profiles were developed from samples of 9 and 14 students, respectively. No other information about any of these students is provided.

Interaction Assessment  Sixty professionals gathered data for the standardization study of the IA. Subjects were 52 students with autism (as defined by the combination
demographics of ABC scores, language age, and chronological age) and 63 individuals who were nonautistic but were otherwise severely disabled. Profiles based on the total sample are provided. No other identifying information on the IA standardization subjects is provided.

**Educational Assessment** The EA is a criterion-referenced subtest. Standardization was conducted by 80 examiners on 41 students who met the defined demographic criteria for autism and on 91 students who were severely disabled but not autistic. A summary profile on each group was developed.

**Prognosis of Learning Rate** The PLR was standardized on 124 students who were assessed by 81 examiners. Diagnostic profiles for autistic and nonautistic groups are provided.

**Summary** The norms for the ASIEP-2 are tenuous at best. The ABC is the best-normed subtest; however, the reader is given very little information other than numbers of subjects per diagnostic group. Hammill, Brown, and Bryant (1992) have suggested that 75 or more subjects in most one-year age intervals for which the test is intended to be used could have been considered appropriate for constructing useful norms. The representativeness of the ABC norm sample along demographic characteristics (such as gender, urban/rural domicile, parental education, geographic region, and ethnicity) is also largely unknown. The remaining four subtests were standardized on not more than 157 students, whose characteristics are mostly unspecified.

**Reliability**
Two reliability statistics for the ABC are provided. On the full Sample 1 group, split-half reliability was .87. On a subset of 14 children rated by 42 people, 95 percent interrater agreement was reached. No information is provided on the type of raters used.

Test–retest reliabilities on five areas of the SVB for 20 subjects over a three-day period were all above .81. Split-half reliability determined by separation of odd–even utterances was .95. Interrater agreement across the repetitive, babbling, noncommunicative, and unintelligible categories averaged 90 percent.

Eighty-seven observers who watched a videotape of the IA administration obtained a median agreement of 89 percent match to a criterion defined as the ratings of six professionals already familiar with the subtest. A Kuder–Richardson test of item reliability yielded a coefficient of .85.

A test–retest evaluation over an unspecified time period was conducted for the EA. Agreement ranged from 84 to 100 percent, with an average across all data points of 95 percent.

In summary, reliability evidence for the ASIEP-2 is potentially strong; most reported coefficients are above .80. Some reliability studies were on small samples of subjects, and some interrater agreement studies are not described in enough detail for a reader to be able to tell who is doing what comparisons. Finally, no reliability for the PLR is reported in the manual. The evidence on reliability is not strong enough to consider the ASIEP-2 reliable for all of the purposes presented by the authors.

Validity
Evidence for the validity of the ABC begins with the procedures used to establish content validity. The authors first examined many sources (such as instruments, checklists, and literature reviews) for relevant behavior descriptors. Second, 26 experts in the field of autism reviewed an initial ABC device. A revised version containing 57 items was subjected to chi-square analysis using individuals' reported autism as the criterion variable. Results were used to assign the weights for items by forming groups of items with similar predictive coefficients.

Two criterion-related validity studies are reported for the SVB. The autistic speech characteristics scores from the SVB were correlated with the total ABC scores for 185 subjects. Correlations ranged from .32 to .46. The SVB language-age raw score was correlated with the language age provided by examiners. This correlation was .81. The authors (Krug, Arick, & Almond, 1993) report that examiner-identified language ages were "generally from the Sequenced Inventory of Communication Development" (p. 46), although no summary of the examiners' reports is provided. Profiles of performance for the two groups are offered for the SVB.

Arguments for the content validity of the EA are based on the reviews of existing curricula, assessments, and literature related to the needs of individuals with autism. Specific validity studies are not presented for the IA or PLR subtests. Several studies showing differences between students with autism and students with severe disabilities on ASIEP-2 subtests are presented, and cross-validity data are discussed by the authors. It is sometimes unclear which sample participated in these studies. Matched sample studies usually had fewer than 25 students per group (some had 4 or 5). Cross-validity, in this case, refers to correlations among subtests of the instrument and not to analyses of
performance of distinct groups on items from the subscales. Because validity for all subtests and their intended purposes must be demonstrated, the authors' treatment of validity issues in the manual provides only limited support for their claims for the instrument and its subscales.

**Summary**

The ASIEP-2 was developed for use by professionals in identifying persons with autism and in making appropriate educational plans. Five subtests are included: the Autism Behavior Checklist, Sample of Verbal Behavior, Interaction Assessment, Educational Assessment, and Prognosis of Learning Rate. Of these, the ABC is the best-developed, best-normed scale and may be useful for screening purposes. Reliability data for the subtests are sparse, and validity is inadequately demonstrated, for the most part. Validity of an instrument is demonstrated over time; the authors have sound theoretical bases for the instrument and its components, but to date, they have not documented enough evidence to support some of the suggested uses for particular scales. Skilled professionals may still gain useful information from administrations of the ASIEP-2, as the complete battery does yield a great deal of qualitative information about the examinee.