The Brigance K&1 Screen and Corresponding Teacher Ratings of Students

Shanna Waddington

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THE BRIGANCE K&L SCREEN AND CORRESPONDING TEACHER RATINGS OF STUDENTS

A Thesis
Presented to
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In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Shanna S. Waddington
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THE BRIGANCE K&L SCREEN AND CORRESPONDING
TEACHER RATINGS OF STUDENTS

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Director of Thesis

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I would also like to extend my love and thankfulness to my wise and wonderful parents for their unconditional support and faith in me throughout my education and lifetime. Finally, a loving thankyou to Bob Paul for his companionship, his sense of humor and for the many ways he has enriched my life.
The relationship between teacher ratings of kindergarten students and scores on the Brigance K&l Screen was examined in order to obtain a measure of construct validity for the Brigance. A Kentucky sample and California sample were included in the study. Data was analyzed separately for each sample for purposes of regional comparison. Teacher's ratings of students' overall ability and ability across five skill dimensions (expressive language, receptive language, personal information, fine motor skills, and gross motor skills) were compared via a linear regression analysis. The results indicated that overall ratings of students by teachers are significant and reliable combinations of ratings on the five dimensions of educational/developmental skills for both samples. A second linear regression analysis compared Brigance total scores with ratings on the individual skills. The results were significant for both samples but revealed some regional differences. A third linear regression analysis involved a comparison of overall ratings with Brigance total scores. The Brigance scores were significantly related to overall ratings in both samples, and the relationship may be described as positive.
INTRODUCTION

Both interest and commitment regarding education of the handicapped child have intensified markedly in recent years. This increased concern is evidenced on the national level by the passing of Public Law 94-142, the Education of All Handicapped Children Act, and on local levels by various attempts to operationalize pre-school screening programs. These programs are based on the belief that early detection and intervention are possible and are, in fact, recommended and desirable procedures (Friedlander, Sterritt, and Kirk, 1975; Karnes and Teska, 1975).

Accumulating evidence indicates that the implementation of pre-school programs can reduce or prevent many educational handicaps and deficits. As a result, there is an increasing demand for identification of those children who could benefit from early intervention (Davidson, Lechtenstein, Carter, and Cronin, 1977).

In order to identify "at risk" children, an effective screening program is essential. For the purpose of this study, screening will be defined as "a technique to identify children who may need further evaluation to determine whether the child has specific educational needs" (Griggs, 1979, p. 49). The intent of screening is to acquire information
with which to determine the need for further assessment of potential educational and/or behavioral deficits.

If a systematic program is not used for the identification of "at risk" children, these children may experience years of frustration in school and poor academic progress before any problems they may have are realized and corrected. Early identification and intervention prevent serious learning and adjustment problems from developing and increase the probability that the child will have a positive educational experience in the first few years of school (Oberklaid, Levine, Ferb, and Hanson, Note 1).

During the past few years, instructional specialists have begun to distinguish between two approaches to screening: norm-referencing and criterion-referencing. Traditionally, the screening for learning deficits has been accomplished through a mode of testing based upon the former. Norm-referencing identifies an individual's performance on a specified task relative to that of others on the same task (Popham and Jusek, 1969). In contrast, criterion-referenced tests are used to identify an individual's status (i.e., performance level) with respect to an established standard of performance rather than the performance of other individuals (Glaser and Nitko, 1971). Meaningfulness of an individual score on a criterion-referenced measure is not dependent upon comparison with other examinees (Popham and Husek, 1969). Instead, a criterion-referenced measure may be considered more directly related to competency of the individual regarding the skill in question.
One example of a criterion-referenced measure and of major interest in this study is the Brigance K&l Screen. This instrument was designed in response to the perceived need for the screening of incoming students (kindergarten and first grade) along dimensions involving cognitive, perceptual, and motor skills. These skills are generally believed to be reflective of the examinee's potential for academic success (Brigance, 1982).

Typical of the research directed toward criterion-referenced screening devices, reliability and construct validity measures are not reported nor available for the Brigance K&l. Historically, the item selection of criterion-referenced tests has been based strictly upon content validity (Hambleton and Novick, 1973). The need for empirical support beyond mere content validity has been established in the literature pertaining to criterion-referenced tests. Yet, such empirical data is clearly lacking in the Brigance K&l Screen.

The purpose of this study is to provide a measure of construct validity for the Brigance by making a comparison of the scores on the Brigance K&l Screen with teacher ratings of the students to whom the test was administered. Teacher ratings of students were chosen as a basis for comparison with the Brigance because they are the traditional alternative to a screening device. In other words, if a child is not screened prior to entrance into school, the teacher must determine whether or not the child needs an evaluation for academic difficulties.
After an analysis of the underlying dimensions reflected by the Brigance K&l Screen and teacher ratings, it will be determined whether or not there is a relationship between scores on the Brigance and overall teacher ratings of students. If a relationship between the Brigance and teacher ratings is found and both reflect the same dimensions, then the Brigance and ratings are interchangeable. If a relationship does not exist, then the Brigance and ratings may be tapping different pieces of information. In that case, the information provided by each may best be used together.
CHAPTER 1

Review of the Literature

Many kindergarten teachers and principals consider entrance into kindergarten as an ideal time for assessment of abilities, particularly in regard to identifying those children with special or exceptional needs. In fact, federal and state legislators have begun to mandate screening of children for retardation, learning disabilities, emotional disturbance, and other disabilities as early as three years of age (Schramm, 1973). The argument is advanced that the earlier the screening and subsequent intervention, the greater the likelihood of success. Thus, early screening and identification is a form of preventive education. The other option is to wait for problems to crystalize in later years, which would require more costly and less effective remediation strategies (Wendt, 1978). However, pre-kindergarten screening practices throughout the country tend to be quite diverse, with varying degrees of effectiveness (Schramm, 1973).

Initially, the most important goal is to distinguish clearly the purposes of screening, the instruments utilized, and the types of results yielded. Particular consideration should be given to the type of kindergarten curriculum which will follow the initial screening. Studies in the field of
developmental psychology suggest that three views of development are prevalent in early childhood education: behavioral-environmental, cognitive-transactional, and normal-maturational.

The behavioral-environmental model is based upon behavioristic psychology, and thus, treats the child as a passive receptient of incoming information. Kindergarten programs of this nature tend to emphasize academic learning and external rewards and punishments as a major focus in order to meet external (to the child) program goals and objectives (Lavatelli, 1968).

The cognitive-transactional model considers the child to be naturally active, seeking, and adapting. Learning takes place through continued transactions with the environment. These kindergarten programs are concerned with creating environments that respond to the child and "match" his level of development. Learning and activity centers predominate in this type of classroom permitting the child to move and transact, as well as to have some choice in his own activities (Kamii & Radin, 1967).

The normal-maturational model, as represented by Gesell (1940), views the child as the product of his experience in the environment. These kindergartens stress socialization skills, and the child is provided with a rich and supportive environment with maximum leeway for self-expression. Little is taught via verbal communication and "readiness" in terms of materials and experiences is the central theme.

In the 1950's, most kindergartens were of the normal-maturational type. The 1960's, with the emphasis upon
accountability and compensatory programming, brought the behavior analysis programming to early childhood education. In the 1970's, reflecting the influence of Jean Piaget, the British Infant School Model (Weber, 1971) brought the cognitive-transactional viewpoint into the forefront of innovative kindergarten programs. Few, if any, kindergarten programs fit neatly into any of the above types, and assessment (i.e., screening) practices rarely seem to correspond to any of the above program models or practices in preschool, kindergarten, or primary grade programs.

Many of the entrance testing programs tend to consist of compilations of previously developed tests or subtests, which are frequently altered or combined in an arbitrary manner to provide the data necessary for the individual program or school district. In other instances, commercial preschool assessment instruments have been adopted. The various approaches to screening can be categorized and delineated according to the purpose of each approach.

**Approaches to Assessment**

Two types of assessment programs currently are being utilized, those with a normative approach and those using instruments based upon criterion-referenced assessment. The normative approach essentially employs the normal curve as a basis for comparing attributes or abilities among groups of children. Criterion-referenced assessment usually is related to mastery considerations and employs a set of behavioral analysis objectives. While the issue of normative versus
criterion testing is becoming a well-discussed (or even "well-worn") topic, the distinction serves to illustrate the general trend in assessment techniques in the schools. Drew (1973) provides an excellent treatment of both approaches.

**Normative Approach**

The normative testing approach corresponds generally to the normal-maturational program model. A careful examination reveals two main subtypes in normative testing.

The first method can be described as categorical, in which the emphasis is placed upon determining exceptional needs according to the individual's overall ability. The use of intelligence tests, readiness measures, perceptual motor tests, and language tests prevails. Though the purpose of this type of assessment is to detect any retardation, lack of readiness, or other learning disorders in order to make appropriate intervention or placement recommendations (Drew, 1973), these assessment devices focus primarily on the examinee's overall level of ability.

The second type of normative assessment is the deficit-centered approach, such as the one described by Smith and Solanto (1971). It differs from the categorical approach in that specific abilities (e.g., auditory memory, fine motor coordination, vocabulary, etc.) are assessed, and children are then classified according to how they compare to the total sample on each attribute. Each ability is assumed to have a normal distribution, and the specific cut-off score
is usually set at the point below which children apparently need additional training or remediation. By diagnosing the specific area in which the child needs help, the educator is able to make appropriate prescriptions.

Generally speaking, these programs often are established by school psychologists who either devise their own tests or utilize subtests of existing instruments which reflect a specific attribute. Tests which attempt to measure social-emotional growth and personality traits also fit into this category.

Both of these normative types of assessment have been constructed essentially to reflect deviation from the "average" of a specified group. Inherent in this approach are several criticisms that revolve around two major aspects: the testing of "readiness" and "preventive" programming.

Both the categorical and deficit-centered approaches to evaluation separate children into groups and categories on the basis of a quantitative score which results from the assessment. Kindergarten entrance scores reflect where the child stands relative to the performance of other children.

Potential misuse regarding this overall ability score lies in the testing for "readiness." This is questionable because it raises the issue of the basic role of the school (Wendt, 1978). One may ask whether the role of the school is to determine who is ready for the program or to take a child at his present level and educate him accordingly. Presently, there is no consensus among school administrators as to how this question should be answered.
An additional confounding issue is that "readiness" is often related to the cultural level of the school or community. A child may not be ready in one school but be able to handle the program in another area of the same community. Some children, indeed, benefit more from a school environment rather than remaining home an extra year, which often happens as a result of "readiness" testing.

A case in point is Kuhlberg and Gershman's (1973) study where immature pre-school children were placed into three groups: waiting at home, a kindergarten readiness program, and a regular program. Follow-up data suggested little or no advantage to waiting. Furthermore, the authors question the idea that readiness can be expressed as a unitary concept. Unfortunately, testing for school readiness rarely appears to be related to effective programming.

Although the deficit-centered approach is more diagnostic and prescriptive than the categorical approach, several possibly questionable practices are employed. The focus of assessment now becomes not one of "screening" children but of assessing them so that "preventative" programming will ameliorate reading and math difficulties in the primary grades.

Essentially, the testing program must determine which children need specialized training. Thus, there is a need to establish cut-off scores in each area being assessed. Once the cut-off scores are established, one may find that children who score just above that point also may need the special curricular attention. On the other hand, there may
be children included in the training groups who do not really need the treatment.

An even more critical issue is the relationship between assessment and prescriptive teaching. When has enough specialized training been given, and what evolves next in the progress of the child after remediation has taken place? Schaer and Crump (1976) reviewed early identification programs related to detection and intervention of learning disabilities and concluded that often this approach produced inconclusive results. They feel that teacher observations, together with continuous daily evaluation, are preferable to many of the presently employed screening practices. Thus, the practice of deficit-centered testing tends to segregate children into special groups, ostensibly in order to meet their needs more efficiently. Whether this really happens remains doubtful considering the social-emotional implications for the child.

**Criterion-Referenced Approach**

In contrast to the normative (child versus group) approach described above, a criterion-referenced approach is based upon comparison to a standard. Instead of determining the extent to which a child compares with others, a determination is made of the specific level of mastery attained. The focus, then, becomes the behavioral objective or function the child has or has not mastered at a particular time. Thus, test interpretation is always relative to both the criterion (degree of mastery attained) and the specific ability being assessed.
Two types of criterion-referenced approaches have emerged. The first is an outgrowth of behavioral-analysis programs and can be labeled academic. The second type is labeled cognitive and stems from an emphasis on cognitive transactional programs, which attempt to screen children according to cognitive skills from a developmental perspective.

Academic assessment is related to specific academic based skills (e.g., letter recognition, number concepts, word endings, etc.), which are placed in a sequential and hierarchical order according to difficulty. It is essentially concerned with the child's proficiency in the basics: reading, writing, language, and mathematics. While this approach is currently utilized by commercial kindergarten readiness programs, it is questioned by theorists who argue that academic skills represent a small portion of the child's realm of abilities and are not pertinent to pre-school screening (Drew, 1973).

The cognitive-developmental approach takes a more holistic stance in attempting to present a total picture of the child. The focus becomes the modalities which the child needs to have developed in order to learn higher-level symbolic tasks. These tasks are ordered in a sequential and developmental manner, according to the maturity level of the child. Instruction may begin at a different point depending upon the individual need of each child. This type of assessment, which is related to the Piagetian and information-processing models, is just beginning to emerge as a result of experimental screening programs.
A criterion cognitive-developmental measure combines a behavior analysis with the cognitive-developmental format found in increasing numbers of early childhood programs. Weikart (1967), Kamii and Radin (1967), and Lavatelli (1968), have well developed pre-school programs based on Piagetian and developmental/cognitive considerations. For example, Lavatelli (1969) structured a pre-school program around the communicative process as reflected in the Illinois Test of Psycholinguistic Abilities.

More recently, programs are being developed which deal with developmental information-processing abilities, such as the Waupun Strategies in Early Childhood Education project (Schramm, 1973; Wendt, 1974). Many others, among them the Brigance K&l Screen (Brigance, 1982), appear to be in the early stages of development and usage. The main argument is that information-processing modalities, along with Piagetian concepts of classification, seriation, and other mental operations are necessary prerequisites for later academic learning. The emphasis is upon the child as an individual and his style of learning, in addition to the skills he possesses upon entrance into school. The basic concept related to developmentally based measurement is that education should be process oriented rather than product oriented. Unfortunately, assessment instruments related to these types of programs are yet to be devised.

Authors of developmental screening instruments should reflect upon Frost and Rowland's (1971) statement that assessment in programs
...should be relative to beginning points rather than any set of normative considerations... and education and children would be winners if such normative notions were replaced by ordinal considerations which are consistent with the nature of human development (p. 132).

**Normative vs. Criterion-Referenced**

Like norm-referenced tests, criterion-referenced tests measure what an individual has learned. Even in the case of criterion-referenced tests, objectives are based upon the norm for the child's age group. Unlike norm-referenced tests, criterion-referenced tests give specific information about what an individual has or has not learned. Criterion-referenced tests are a valuable tool for the development of an individual program of education because test information is more specific. Conversely, norm-referenced tests may best be used to help make educational decisions about groups of students (Hambleton and Novick, 1973). Proger and Mann (1973) recently analyzed both normative and criterion-referenced approaches thoroughly. They feel that the criterion-referenced procedure leads to more realistic expectations for the child and more sound decision making for the professional staff.

**Summary**

Pre-school screening is rapidly becoming an established educational practice across the country. Four distinctly separate approaches have been presented, each based upon unique purposes and each producing distinctly different outcomes. The need to identify the educational requirements of learning disabled and retarded children is becoming more
apparent, and criterion-based developmental approaches are emerging as an alternative to traditional normative assessment. The need persists to articulate and re-define the purposes for pre-school screening and assessment. Many new instruments are evolving. Unfortunately, many will be adopted for use without consideration of philosophical issues underlying assessment and often without regard for the relationship between assessment and curriculum programming. Before school psychologists can develop or adopt a pre-school testing program, a thorough understanding is necessary of developmental psychology, the kindergarten curriculum and educational programs in the local district, as well as the various issues involved in the type of testing program selected. Above all, one should understand that a great deal of work remains before pre-kindergarten assessment provides individual programming for children in a developmental perspective.

Statement of the Problem

Frost and Rowland (1971) contend that pre-school assessment should be relative to the child's current developmental status in addition to his learning potential. The literature supports the need for developmentally based screening instruments (Schramm, 1973; Uzgiris and Hunt, 1975; Wendt, 1974).

This study was prompted by the search for such an instrument. The Brigance K&l was selected for research because it is a criterion-referenced, developmentally based assessment device designed to screen pre-school children for
learning deficits. Specifically, the Brigance incorporates a number of subtests intended to reflect the cognitive and academic abilities of students, including those abilities considered developmental in nature. Thus, the Brigance K&l incorporates many of the features inherent in the criterion-based, cognitive-developmental model for assessment described earlier. However, typical of criterion-referenced tests, the Brigance K&l lacks empirical verification beyond measures of content validity.

The purpose of this study is to provide psychometric data pertinent to the construct validity of the Brigance K&l Screen. Teacher ratings of both overall and specific abilities of students were used as criteria against which to judge the validity of the Brigance. Teacher ratings were selected for two reasons. First, they constitute the most prevalent means of identifying students with learning difficulties in the classroom. Second, teacher perceptions are often viewed as preferable to many screening programs now being used because they are based on continued observation and take into account the child's overall level of ability (Schaer and Crump, 1976). Thus, construct validity would be established if scores on the Brigance K&l are found to be related to teacher ratings of students.
CHAPTER 2

Method

Subjects

A total of 556 students enrolled in kindergarten classes and their teachers practiced in the study. Subjects included the students of ten intact kindergarten classes from Warren County, Kentucky, for a total of 304 students. An additional 252 subjects, from 14 intact kindergarten classes in Santa Clara, California, participated in the study.

Instruments

The Brigance K&l Screen (Brigance, 1982) is designed to identify children who are in need of further evaluation for the diagnosis of learning deficiencies. The K&l contains twelve subtests: Personal Data Response, Color Recognition, Picture Vocabulary, Visual Discrimination, Visual Motor Skills, Gross Motor Skills, Rote Counting, Identification of Body Parts, Follows Verbal Directions, Numeral Comprehension, Prints Personal Data, and Syntax and Fluency. The test consists of 14 items requiring a total of 80 responses. The examiner asks the questions orally, circles the items answered correctly, and multiplies the number of correct responses for each subtest by the point value assigned to that subtest. The scores on each subtest are then added to obtain a total score (see Appendix A).
Two rating scales were given to each kindergarten classroom teacher participating in the study, along with a cover sheet explaining the rating procedure (see Appendix B). The first form was used by the teacher to assign each member of the class to one of five overall categories: At Risk, Below Average, Average, Above Average, and Superior (see Appendix C). The second form was used by the teacher to assign the same students to the above categories along each of five dimensions: Expressive Language (EXPL), Receptive Language (RECL), Personal Information (PERS), Fine Motor Skills (FINE), and Gross Motor Skills (GROSS) (see Appendix D).

**Procedure**

Access to the subjects was obtained with the permission of the school district superintendents in both the Kentucky and California samples. Individual teachers were notified of the date and time their classes would be tested.

Prior to testing in Kentucky, twenty-two undergraduate students in special education were trained in the administration of the Brigance K&l Screen. Additional testing in Kentucky was performed by a graduate student in psychology. Testing in California was conducted by graduate students in the field of education. The Brigance was administered to each student with the exception of those students absent on the date of testing.

At the time of testing, teachers were given the first rating form and instruction sheet. The second form of the
rating scale was distributed two weeks later with instructions for filling out that form. Brigance scores were supplied to each teacher after a completion of both rating forms.

**Design**

In order to facilitate analysis of the data, the labels At Risk, Below Average, Average, Above Average, and Superior were converted to numerical values (1, 2, 3, 4, and 5, respectively). The data analysis involved three steps. First, a multiple regression was performed using the overall ratings of students' ability by teachers as the criterion and individual ratings on the five educational/developmental skills (expressive language, receptive language, personal information, fine motor skills, and gross motor skills) as the predictors. Second, the total scores on the Brigance were regressed on individual ratings on the five dimensions mentioned above. Third, the overall ratings were regressed on Brigance total scores. All three analyses were conducted separately for California and Kentucky samples.
CHAPTER 3

Results

A total of six regression analyses were performed on the data, with Kentucky and California data analyzed separately for purposes of regional comparison. Each of the following criterion-predictor relationships was examined: (1) overall ratings (OVER) of students ability and ratings on five dimensions of educational/developmental skills (expressive language, receptive language, personal information, fine motor skills, and gross motor skills), (2) Brigance (BRIG) total scores and ratings on the five individual dimensions, (3) overall ratings and Brigance total scores. The results of these six analyses are presented in Table 1. Note that all of the regressions are significant at the .05 level.

Regarding the Kentucky sample, the first analysis involved the use of overall ratings as the criterion and ratings on the five dimensions as the predictors. Expressive language, receptive language, personal information, and fine motor skills were each significant at the .05 level and, in combination, accounted for 82% of the variance in overall ratings. This model is represented by the regression equation

\[ \text{OVER} = -.23 + .24 \text{EXPL} + .25 \text{RECL} + .25 \text{PERS} + .28 \text{FINE} \]  

(1)

In order to determine the reason for the exclusion of the gross motor dimension in the model, an additional analysis
TABLE 1

Results of Linear Regression Analyses

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>F</th>
<th>MSE</th>
<th>% Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall/Skills</td>
<td>304</td>
<td>18.66</td>
<td>131.75</td>
<td>81.9</td>
</tr>
<tr>
<td>Brigance/Skills</td>
<td>304</td>
<td>11.14</td>
<td>1.47</td>
<td>5.8</td>
</tr>
<tr>
<td>Overall/Brig</td>
<td>304</td>
<td>270.26</td>
<td>.28</td>
<td>3.5</td>
</tr>
<tr>
<td>California</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall/Skills</td>
<td>252</td>
<td>35.91</td>
<td>46.58</td>
<td>63.9</td>
</tr>
<tr>
<td>Brigance/Skills</td>
<td>252</td>
<td>99.80</td>
<td>1.34</td>
<td>30.2</td>
</tr>
<tr>
<td>Overall/Brig</td>
<td>252</td>
<td>109.55</td>
<td>.82</td>
<td>28.5</td>
</tr>
</tbody>
</table>

Note: All F-ratios are significant at the .05 level
was conducted. Using overall rating as the criterion and gross motor skills as the predictor, a significant correlation of .68 was found. This indicates that while gross motor skills does not add anything to the variance accounted for by the other dimensions, it does correlate significantly with overall ratings and may therefore be considered a significant predictor by itself.

With the Brigance as the criterion and ratings on the five dimensions as predictors, only expressive language was significant at the .05 level and was able to account for only 6% of the variance in Brigance scores. The equation is

\[ \text{BRIG} = 80.94 + 2.46 \times \text{EXPL} \]  

With overall rating as the criterion and Brigance total score as the predictor the amount of shared variance was significant at the .05 level but was only 3.5%. The regression equation is

\[ \text{OVER} = 1.45 + .02 \times \text{BRIG} \]

Regarding the California sample, the first analysis involved the use of overall rating as the criterion and ratings on the five individual dimensions as predictors. Expressive language, receptive language, personal information, and fine motor skills were each significant at the .05 level and, in combination, accounted for 64% of the variance in overall ratings. This model is represented by the regression equation

\[ \text{OVER} = -.69 + .36 \times \text{EXPL} + .19 \times \text{RECL} + .30 \times \text{PERS} + .25 \times \text{FINE} \]
Since gross motor skills was again not included in the model, a regression was performed using overall ratings as the criterion and gross motor skills as the predictor. A significant correlation of .57 was obtained. This is indicative of an overlap of information with the other dimensions, which prohibits gross motor skills from adding to the total variance accounted for in overall ratings.

With the Brigance as the criterion and ratings on the five dimensions as predictors, expressive language, personal information, and fine motor skills each were significant at the .05 level and, in combination, accounted for 30% of the variance in Brigance scores. The equation is

\[ \text{BRIG} = 73.19 + 1.66\text{EXPL} + 1.44\text{PERS} + 1.46\text{FINE} \]  

(5)

With overall rating as the criterion and Brigance total score as the predictor, the amount of shared variance was significant at the .05 level and constituted 28.5% of the total variance. The regression equation is

\[ \text{OVER} = -.49 + .09\text{BRIG} \]  

(6)

Comparison across the Kentucky and California samples reveals that the same four variables account for the variance in overall teacher ratings. These are expressive language, receptive language, personal information, and fine motor skills. Even though the percentage of variance accounted for in overall ratings by the individual dimensions is higher for the Kentucky sample (82%) than for the California sample (64%), both are quite substantial. The variable gross motor skills did not add to the proportion of the variance accounted
for by the other dimensions for either sample, but the gross motor dimension did correlate significantly with overall rating in both samples. Thus, overall ratings reflect specific ratings on the individual skill dimensions.

Comparison of Kentucky and California samples with respect to the relationship between Brigance total scores and ratings on the five individual dimensions indicates a discrepancy. In the Kentucky sample, only expressive language accounted for a significant amount of the variance in Brigance scores; while in the California sample, personal information and fine motor skills were significant in addition to expressive language. Furthermore, significantly more variance in Brigance total scores was accounted for in the California sample than in the Kentucky sample.

Comparison of Kentucky and California samples with respect to overall ratings and Brigance total scores indicates a significant relationship for both samples. However, while the proportion of shared variance is somewhat larger for the California sample than for the Kentucky sample, neither is very high.
CHAPTER 4

Discussion

The results of this study indicate that overall ratings of students by teachers are significant and reliable combinations of ratings on the five individual dimensions of educational/developmental skills. The universality of this finding is evidenced by the striking similarity of data obtained separately from California and Kentucky samples. However, a difference between the two regional samples surfaced when data obtained from the Brigance K&l Screen were examined. In the Kentucky sample the Brigance reflected only the dimension of expressive language; while in the California sample, the Brigance tapped personal information and fine motor skills in addition to expressive language. Furthermore, significantly more variance in Brigance scores was accounted for in the California sample than in the Kentucky sample. The reason for this difference is not readily apparent.

Regarding the issue of construct validity of the Brigance K&l Screen, results of this study are somewhat ambiguous. The Brigance scores were significantly related to overall ratings in both samples, and the relationship may be described as positive: children who scored higher on the Brigance were
also rated higher by their teachers. Thus, there is some evidence of construct validity. However, the amount of shared variance was extremely low in the Kentucky sample and only moderate in the California sample. This indicates a degree of discrepancy between Brigance scores and overall ratings.

One possible reason for the discrepancy is misinterpretation of students' behavior in the classroom by the teacher, which would cause ratings to be misrepresentative of students' performance. Such inaccuracy of ratings would occlude a strong relationship between Brigance scores and actual performance in the classroom and, in doing so, would force the measure of construct validity to be artificially low. Another possible reason is simply a lack of correspondence between Brigance scores and actual performance in the classroom. This would be cause to question the construct validity of the Brigance K&l Screen.

Thus, the issue of construct validity of the Brigance K&l Screen remains unresolved. Suggestions for future research on this topic include instructing teachers in the nature and use of rating scales prior to data collection, using a more objective behavioral criterion for assessing the performance of children in the classroom, and administration of a diagnostic evaluation following screening with the Brigance.

Limitations of this study include the restrictiveness of the geographical range of the population. A more adequate study would need to include a larger cross section of
kindergarten students which leaves research yet to be conducted on first grade children. In addition, the screening device ideally should be administered prior to enrollment in school. Furthermore, the possibility that test anxiety may have affected test results should not be ignored when dealing with a population so young.

In conclusion, there are a great many screening instruments on the market, yet few report results of statistical analyses for construct validity. Despite complications, there is a substantial need for carefully designed research on screening devices to more fully appraise their utility and effectiveness.
APPENDIX A
## B. BASIC SCREENING ASSESSMENTS

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<tr>
<th>Page</th>
<th>Assessment Number</th>
<th>Skill (Circle the skill for each correct response and make notes as appropriate.)</th>
<th>Number of Correct Responses</th>
<th>Point Value</th>
<th>Student's Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>Personal Data Response: Verbally gives: 1. first name 2. full name 3. age 4. address (street or mail) 5. birthdate (month and day)</td>
<td>×</td>
<td>2 points each</td>
<td>/10</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Color Recognition: Identifies and names the color: 1. red 2. blue 3. green 4. yellow 5. orange 6. purple 7. brown 8. black 9. pink 10. gray</td>
<td>×</td>
<td>1 point each</td>
<td>/10</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>Picture Vocabulary: Recognizes and names picture of: 1. dog 2. cat 3. key 4. girl 5. boy 6. airplane 7. apple 8. leaf 9. cup 10. car</td>
<td>×</td>
<td>1 point each</td>
<td>/10</td>
</tr>
<tr>
<td>6</td>
<td>4A</td>
<td>Visual Discrimination: Visually discriminates which one of four symbols is different</td>
<td>×</td>
<td>1 point each</td>
<td>/10</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>Visual-Motor Skills: Copies: 1. 2. 3. + 4. □ 5 △</td>
<td>×</td>
<td>2 pts. ea</td>
<td>/10</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
<td>Gross Motor Skills: 1. Hops 2 hops on one foot. 2. Hops 2 hops on either foot. 3. Stands on one foot momentarily. 4. Stands on either foot momentarily with eyes closed. 5. Stands on one foot for 5 seconds. 6. Stands on either foot momentarily with eyes closed.</td>
<td>×</td>
<td>1 point each</td>
<td>/10</td>
</tr>
<tr>
<td>12</td>
<td>8</td>
<td>Rote Counting: Counts by rote to: (Circle all numerals prior to the first error.) 1 2 3 4 5 6 7 8 9 10</td>
<td>×</td>
<td>5 point each</td>
<td>/5</td>
</tr>
<tr>
<td>15</td>
<td>11</td>
<td>Follows Verbal Directions: Listens to, remembers, and follows: 1. one verbal direction 2. two verbal directions</td>
<td>×</td>
<td>2.5 points each</td>
<td>/5</td>
</tr>
<tr>
<td>17</td>
<td>12</td>
<td>Numerical Comprehension: Matches quantity with numerals: 2 1 4 3 5</td>
<td>×</td>
<td>2 points ea</td>
<td>/10</td>
</tr>
<tr>
<td>21</td>
<td>15</td>
<td>Prints Personal Data: Prints first name. Reversals: Yes ______ No ______</td>
<td>×</td>
<td>5 points each</td>
<td>/5</td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>Syntax and Fluency: 1. Speech is understandable. 2. Speaks in complete sentences.</td>
<td>×</td>
<td>5 points ea</td>
<td>/10</td>
</tr>
</tbody>
</table>

## D. OBSERVATIONS:
1. Handedness: Right ______ Left ______ Uncertain ______
2. Pencil grasp: Correct ______ Incorrect ______
3. Maintained paper in the proper position when writing: Yes ______ No ______
4. Record other observations below or on the back.

## E. SUMMARY: (Compared to other students included in this screening)
1. this student scored: Lower ______ Average ______ Higher ______
2. this student's age is: Younger ______ Average ______ Older ______
3. the teacher rates this student: Lower ______ Average ______ Higher ______
4. the assessor rates this student: Lower ______ Average ______ Higher ______

## F. RECOMMENDATIONS:
Place in: Preschool ______ Kindergarten ______ Kindergarten ______ Kindergarten ______

Other (Indicate) ______

Refer for: (Indicate if needed) ______

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COPY 1
APPENDIX B
Instructions to Complete
Teacher's Forms

Form A

1) Divide total number of students in each class by 5.
2) If there is a remainder place that value in the average group along with the original value of that group.
   
Ex. If there are 27 children in a class:
   1) divide 27 by 5 = 5 children per level,
   2) with 2 more in the average group = 7 total in average group.

3) Write the names of top group of students in Superior group space.
   Write the names of lowest group in the "At Risk" group space.
   Write the names of the next highest group in the "High Average" space.
   Write the names of the next lowest group in the "Low Average" space.
   Write remaining names in the "Average" space.

4) In each group put the names in order from highest to lowest.
5) Convert that list (step 4) into the student's respective number he or she has on the class role.

Form B

1) Using the student number from the class role:
2) Assign each student a value on each trait listed at the top of each column:
   A = Superior
   B = High Average
   C = Average
   D = Low Average
   E = At Risk

3) You may assign as many A's, B's, etc. as you deem appropriate.
   
Ex. Everyone may get an "A" in column 1 (Receptive language) or no one may.

* Administer Forms A & B approximately 2 weeks apart. Form A is administered first.
APPENDIX C
<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
</table>

**Step 1:** Assign the appropriate number of students who you believe fit into the above categories according to your perceptions of their present level of functioning.  
**Step 2:** Rank order the students within each of the categories from highest to lowest.  

Teacher Name ___________________
<table>
<thead>
<tr>
<th>Student #</th>
<th>Expressive Language</th>
<th>Receptive Language</th>
<th>Personal Info</th>
<th>Fine Motor Skills</th>
<th>Gross Mot. Sk.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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REFERENCE NOTES

REFERENCES


Gesell, A., Halverson, H. M., Thompson, T. D., Ilg, G. L.,
Caster, B. M., Ames, L. B., & Amatruda, C. S. The
first five years of life: A guide to the study of the

Glaser, P. L., & Nitko, S. R. Criterion-referenced test
toery and development. Journal of Educational

Griggs, R. M. Comprehensive developmental screening model.
Indianapolis, Ind.: Indiana State Department of Public
Instruction, 1979. (ERIC Document Reproduction Service
no. ED 17215)

Hambleton, R. K., & Novick, M. R., Toward an integration of
toery and method for criterion-referenced tests.

Kamii, C. K., & Radin, N. A framework for a preschool
curriculum based upon Piaget's theory. Journal of

Kluhberg, J. M., & Gershman, E. S. School readiness:
Studies of assessment procedures and comparison of
three types of programming for immature five year olds.
Psychology in the Schools, 1973, 10, 410-419.

Lavatelli, C. S. A Piaget-derived model for compensatory
pre-school education. In J. L. Frost (Ed.), Early
childhood education rediscovered. New York: Holt,

Popham, W. J., & Husek, T. R. Implications of criterion-
referenced measurement. Journal of Educational


Wendt, R. N. Individualized strategy in early childhood education. *The Title III Quarterly, Fall, 1974, 12-14.*